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MANAGEMENT BY RESULTS TECHNICAL APPENDICES

DETAILS OF

1985-86 RESULTS

JUNE, 1987

Ontario
Ministry of the Environment

Hon. Jim Bradley
Minister

Rod McLeod
Deputy Minister

MANAGEMENT BY RESULTS TECHNICAL APPENDICES

DETAILS OF 1985-86 RESULTS

JUNE 1987

MINISTRY OF THE ENVIRONMENT
POLICY AND PLANNING BRANCH

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TABLE OF CONTENTS

		Page No.
INTRODUCTION		(i)
MBR TECHNICAL APPENDICES:		
A.	REMEDIAL MEASURES AT WATER AND SEWAGE TREATMENT FACILITIES WITH CRITERIA FAILURES	1
B.	STATUS OF INDIVIDUAL WATER AND SEWAGE PROBLEMS	10
C.	SURFACE AND GROUNDWATER QUANTITY EVALUATION BY TERTIARY WATERSHED	13
D.	INVENTORY OF INDUSTRIAL FACILITIES CURRENTLY SUBJECT TO MBR APPRAISAL	42
E.	MBR EVALUATION OF INDUSTRIAL FACILITIES	49
F.	INVENTORY OF INCINERATORS	118
G.	SURFACE AND GROUNDWATER QUALITY EVALUATION BY TERTIARY WATERSHED	119
H.	SURFACE WATER QUALITY EVALUATION BY SECONDARY WATERSHED	179
I.	AIR QUALITY EVALUATION BY GEOGRAPHICAL LOCATION	186
J.	INVENTORY OF MUNICIPAL LANDFILL SITES IDENTIFIED AS HAVING PROBLEMS	239
K.	INVENTORY OF LIQUID INDUSTRIAL WASTE SITES, FACILITIES, TREATMENT CENTRES AND PLANTS	267
L.	SOURCE SEPARATION PROJECTS FUNDED BY MOE	270
M.	SOURCE SEPARATION PROJECTS NOT FUNDED BY MOE	272
N.	MARKET DEVELOPMENT PROJECTS ON RESOURCE RECOVERED MATERIALS	277
O.	ENVIRONMENTAL ASSESSMENTS APPROVED DURING 1985-86	278

Page No.

P. SEWAGE TREATMENT FACILITY EFFLUENT GUIDELINES 280

Q. INVENTORY OF MUNICIPALITIES WHICH RECEIVED TERMITE GRANTS DURING 1985-86 281

R. INVENTORY OF MUNICIPAL WATER TREATMENT FACILITIES UNDER THE DRINKING WATER SURVEILLANCE PROGRAM 282

S. INVENTORY OF SEWAGE TREATMENT FACILITIES PRODUCING MARGINAL OR UNACCEPTABLE SLUDGES 283

INTRODUCTION

This report provides the Technical Appendices for the Ministry's 1985-86 Results. The Appendices include the specific details of the 1985-86 Results which are referred to in, and should be used in conjunction with, the Management By Results Report, Abstracts of 1985-86 Results.

Any queries concerning the data in the MBR Reports or Technical Appendices should initially be directed to:

Policy and Planning Branch
Ministry of the Environment
12th Floor
135 St. Clair Avenue West
Toronto, Ontario M4V 1P5

APPENDIX A

REMEDIAL MEASURES AT WATER AND SEWAGE TREATMENT FACILITIES
WITH CRITERIA FAILURES

REMEDIAL MEASURES - MINISTRY WATER TREATMENT PLANTS

	1985-1986 PLANNED		1985-86 ACTUAL	
PRIMARY REASON FOR FAILURE TO MEET OBJECTIVES	FAILURES IDENTIFIED	REMEDIAL MEASURES	FAILURES IDENTIFIED	REMEDIAL MEASURES
1. RAW WATER CHARACTERISTICS	13	1 engineering study phase 1 final design phase 1 funding approval rejected - project halted 1 construction completed 3 marginal failure - continue to maintain and monitor level of failed parameter closely 6 aesthetic problem only - no action planned	9	1 engineering study phase 1 under construction 1 marginal failure - continue to maintain and monitor level of failed parameter closely 5 aesthetic problem only - no action planned 1 no action
2. TREATED WATER CHARACTERISTICS	2	2 aesthetic problem only - no action planned	2	1 distribution system disinfection underway 1 new equipment is being installed
3. WATER QUANTITY	4	2 final design phase 1 funding approval rejected - project halted 1 under construction	11	1 under discussion with municipality 3 engineering study phase 2 under construction 1 construction completed 1 replacement of distribution system underway 2 no action 1 facility operational
4. MAINTENANCE AND/OR OPERATION	0		1	1 existing equipment/operation is being repaired

5. PROCESS AND/OR EQUIPMENT	3	1 construction completed 2 aesthetic problem only - no action planned	7	1 existing equipment/operation is being modified 1 remedial measures being evaluated 2 no action 1 facility operational 1 existing equipment/operation is being repaired 1 minor deviations - no remedial measures are required
6. OTHER	1	1 no action	5	2 existing equipment/operation is being modified 1 other 1 marginal failure - continue to maintain and monitor level of failed parameter closely 1 no action
TOTAL	23		35	

REMEDIAL MEASURES - MUNICIPAL SEWAGE TREATMENT PLANTS

	1985-86 PLANNED		1985-86 ACTUAL	
PRIMARY REASON FOR FAILURE TO MEET OBJECTIVES	FAILURES IDENTIFIED	REMEDIAL MEASURES	FAILURES IDENTIFIED	REMEDIAL MEASURES
1. INFLUENT SEWAGE CHARACTERISTICS	1	1 under construction	10	2 final design phase 1 funding under review 1 under construction 1 environmental assessment process 2 other 1 program under review 1 under discussion with municipality 1 inplant sampling program is being modified
2. COLLECTION SYSTEM PROBLEMS	0		5	1 funding under review 1 environmental assessment process 1 collection system deficiency under study 1 operator training is being provided 1 under discussion with municipality
3. MAINTENANCE AND/OR OPERATION	0		11	1 funding under review 1 environmental assessment process 1 program under review 1 operator training is being provided 3 implementing an operations control program 1 inplant sampling program is being modified 2 upgrading completed 1 no action

4. PROCESS AND/OR EQUIPMENT	3	1 under discussion with municipality 1 final design phase 1 infiltration problems are being corrected	18	3 under discussion with municipality 2 engineering study phase 1 final design phase 2 under construction 1 environmental assessment process 1 operator training is being provided 1 conducting treatability studies 2 phosphorus removal operation under review 2 process control improvements underway 1 existing equipment/operation is being modified 1 marginal failure - continue to maintain and monitor level of failed parameter closely 1 no action
5. SLUDGE REMOVAL/DISPOSAL	0		3	1 developing a new and/or improving the incineration facility 1 environmental assessment process 1 collection system deficiency under study
6. OTHER	3	1 engineering study phase 1 final design phase 1 remedial measures being evaluated	12	1 under discussion with municipality 1 inplant sampling program is being modified 1 other 2 minor deviations - no remedial measures are required 1 marginal failure - continue to maintain and monitor level of failed parameter closely 4 no action 1 engineering study phase 1 funding under review
7. NOT RELATED TO PLANT PERFORMANCE	0		3	1 under discussion with municipality 1 engineering study phase 1 new equipment is being installed
TOTAL	7		62	

REMEDIAL MEASURES - MINISTRY SEWAGE TREATMENT PLANTS

	1985-86 PLANNED		1985-1986 ACTUAL	
PRIMARY REASON FOR FAILURE TO MEET OBJECTIVES	FAILURES IDENTIFIED	REMEDIAL MEASURES	FAILURES IDENTIFIED	REMEDIAL MEASURES
1. INFLUENT SEWAGE CHARACTERISTICS	26	2 engineering study phase 6 final design phase 1 funding under review 6 under construction 5 construction completed 1 facility operational 1 other 1 infiltration problems being corrected 1 eliminating winter bleeding 1 phosphorus removal operation under review 1 conducting treatability studies	35	4 under discussion with municipality 4 engineering study phase 1 final design phase 5 funding under review 3 under construction 2 construction completed 2 environmental assessment process 3 collection system input monitoring 2 operation and/or maintenance procedures being implemented 1 phosphorus removal operation under review 1 marginal failure - continue to maintain and monitor level of failed parameter closely 1 reduce winter bleeding 6 no action
2. COLLECTION SYSTEM PROBLEMS	5	1 under discussion with municipality 1 under construction 1 collection system deficiency under study 1 infiltration problems are being corrected 1 sewer replacement underway	7	1 engineering study phase 1 final design phase 1 collection system input monitoring 2 collection system deficiency under study 1 sewer repair underway 1 no action
3. MAINTENANCE AND/OR OPERATION	0		2	1 inplant sampling program is being modified 1 start up difficulties being remedied

4. PROCESS AND/OR EQUIPMENT	6	2 under discussion with municipality 1 construction completed 1 conducting treatability studies 1 existing equipment/operation is being repaired 1 no action	13	1 under discussion with municipality 3 engineering study phase 1 final design phase 1 process control improvements underway 1 new equipment is being installed 1 existing equipment/operation is being modified 3 existing equipment/operation is being repaired 1 a minor modification is being performed 1 no action
5. SLUDGE REMOVAL/DISPOSAL	0		0	
6. OTHER	13	1 engineering study phase 1 final design phase 1 funding under review 2 under construction 1 construction completed 1 environmental assessment process 1 collection system deficiency under study 1 sewer repair underway 1 monitoring of bacteria levels under way 2 aesthetic problem only - no action planned 1 study of the potential for contamination underway	33	2 under discussion with municipality 2 under construction 3 construction completed 1 facility operational 2 phosphorus removal operation under review 1 start up difficulties being remedied 1 upgrading completed 2 a minor modification is being performed 1 minor deviations - no remedial measures are required 2 marginal failure - continue to maintain and monitor level of failed parameter closely 2 aesthetic problem only - no action planned 10 remedial measures being evaluated 4 no action
7. NOT RELATED TO PLANT PERFORMANCE	0		1	1 existing equipment/operation is being repaired
TOTAL	50		91	

REMEDIAL MEASURES - MUNICIPAL WATER TREATMENT PLANTS

	1985-86 PLANNED		1985-86 ACTUAL	
PRIMARY REASON FOR FAILURE TO MEET OBJECTIVES	FAILURES IDENTIFIED	REMEDIAL MEASURES	FAILURES IDENTIFIED	REMEDIAL MEASURES
1. RAW WATER CHARACTERISTICS	31	5 under discussion with municipality 2 engineering study phase 1 final design phase 2 funding under review 5 under construction 1 construction completed 1 conducting treatability studies 2 minor deviations - no remedial measures are required 7 aesthetic problem only - no action planned 5 no action	66	12 under discussion with municipality 9 engineering study phase 1 final design phase 2 funding under review 4 under construction 2 construction completed 1 connection to other plant 1 distribution system disinfection underway 1 program under review 2 conducting treatability studies 1 new equipment is being installed 1 upgrading completed 1 a minor modification is being performed 1 marginal failure - continue to maintain and monitor bacteria levels closely 5 marginal failure - continue to maintain and monitor level of failed parameter closely 1 remedial measures underway to prevent salt contamination 1 alternative water source under development 8 aesthetic problem only - no action planned 2 remedial measures being evaluated 9 no action 1 process control improvements underway
2. TREATED WATER CHARACTERISTICS	4	1 under discussion with municipality 2 under construction 1 program under review	6	1 under construction 1 monitoring of bacteria levels underway 1 marginal failure - continue to maintain and monitor level of failed parameter closely 1 aesthetic problem only - no action planned 2 no action

3. MAINTENANCE AND/OR OPERATION	2	1 final design phase 1 under construction	26	3 under discussion with municipality 3 engineering study phase 1 final design phase 1 distribution system deficiency under study 1 program under review 1 operation and/or maintenance procedures being implemented 6 inplant sampling program is being modified 3 monitoring procedures and/or equipment being upgraded 2 implementing a plant performance monitoring program 1 minor deviations - no remedial measures are required 4 no action
4. PROCESS AND/OR EQUIPMENT	7	1 funding approval rejected - project halted 1 under construction 1 construction completed 1 aesthetic problem only - no action planned 3 no action	27	2 under discussion with municipality 4 engineering study phase 1 under construction 1 construction completed 1 process control improvements underway 2 marginal failure - continue to maintain and monitor level of failed parameter closely 2 alternative water source under development 1 aesthetic problem only - no action planned 12 no action 1 remedial measures being evaluated
5. OTHER	4	1 engineering study phase 1 under construction 1 construction completed 1 upgrading completed	6	2 engineering study phase 1 under construction 1 marginal failure - continue to maintain and monitor level of failed parameter closely 1 aesthetic problem only - no action planned 1 no action
TOTAL	48		131	

APPENDIX B

STATUS OF INDIVIDUAL WATER AND SEWAGE PROBLEMS
THAT HAVE BEEN APPROVED AS ELIGIBLE
FOR CAPITAL CONSTRUCTION GRANTS

STATUS OF INDIVIDUAL WATER SUPPLY AND WATER QUALITY PROBLEMS

1985-86 Actual

	Disbursement Projects	Up-Front Grant Projects	Low Cost Alternative Projects	Total Problems
Private Well Contamination	2	58	39	99
Resolved this year	1	3	6	10
Incomplete	1	24	30	55
Not Addressed	0	31	3	34
Communal Water Contamination	3	36	5	44
Resolved this year	1	4	2	7
Incomplete	1	19	2	22
Not Addressed	1	13	1	15
Water Shortages	6	190	19	215
Resolved this year	3	53	4	60
Incomplete	3	82	15	100
Not Addressed	0	55	0	55
Water Nuisance Problems	2	28	3	33
Resolved this year	2	7	1	10
Incomplete	0	10	1	11
Not Addressed	0	11	1	12
Local Development Delays	4	6	0	10
Resolved this year	0	0	0	0
Incomplete	3	4	0	/
Not Addressed	1	2	0	3
Other	1	172	1	174
Resolved this year	0	9	0	9
Incomplete	0	46	1	47
Not Addressed	1	117	0	118
TOTAL PROBLEMS	18	490	67	575
Resolved this year	7	76	13	96
Incomplete	8	185	49	242
Not Addressed	3	229	5	237

STATUS OF INDIVIDUAL SEWAGE PROBLEMS

1985-86 Actual

	Disbursement Projects	Up-Front Grant Projects	Low Cost Alternative Projects	Total Problems
Septic Tank Problems	11	92	33	136
Resolved this year	5	21	5	31
Incomplete	5	44	26	75
Not Addressed	1	27	2	30
Communal Sewage Collection Problems	4	94	1	99
Resolved this year	2	21	0	23
Incomplete	2	50	1	53
Not Addressed	0	23	0	23
Inadequate Sewage Treatment	7	73	2	82
Resolved this year	7	13	0	20
Incomplete	0	41	1	42
Not Addressed	0	19	1	20
Inferior Water Quality	9	30	14	53
Resolved this year	5	3	1	9
Incomplete	4	14	13	31
Not Addressed	0	13	0	13
Local Development Delays	3	138	0	141
Resolved this year	0	9	0	9
Incomplete	3	43	0	46
Not Addressed	0	86	0	86
Other	2	21	0	23
Resolved this year	0	4	0	4
Incomplete	0	11	0	11
Not Addressed	2	6	0	8
TOTAL PROBLEMS	36	448	50	534
Resolved this year	19	71	6	96
Incomplete	14	203	41	258
Not Addressed	3	174	3	180

APPENDIX C

SURFACE AND GROUNDWATER QUANTITY EVALUATION BY TERTIARY WATERSHED

SURFACE AND GROUNDWATER QUANTITY EVALUATION BY TERTIARY WATERSHED

The evaluation of the 144 Tertiary watersheds in the Province, on the following pages, utilize this structure and coding system:

MAJOR WATER USES

13 CATEGORY POSSIBILITIES:

1A: Agricultural Irrigation
1B: Agricultural Supply
1C: Agricultural Drainage

2A: Commercial Supply

3A: Industrial Supply
3B: Industrial-Extractive
3C: Industrial-Construction Dewatering and Drainage

4A: Public (Municipal) Supply
4B: Private (Domestic) Supply

5A: Recreation & Aesthetics
5B: Water & Wildlife Conservation

6A: Waste Assimilation
6B: Assimilation Augmentation

9 SOURCE POSSIBILITIES:

1. Groundwater Source
   - 1a Wells(s)
   - 1b Flowing Well(s)
   - 1c Well Point(s)
   - 1d Pit, Quarry or Excavation
   - 1e Dugout Pond
2. Surface Water Source
   - 2a Dugout Pond
   - 2b By-pass Pond
   - 2c Off-stream Pond
3. Surface Water Source (Direct withdrawal) Flow or volume from stream, lake, river

Example:
4A:1a Municipal Supply Wells as source

EXISTING OR POTENTIAL PROBLEMS WITH MAJOR WATER USES

11 CATEGORY POSSIBILITIES:

1) Excessive withdrawal regularly
2) Excessive withdrawal seasonally
3) Excessive withdrawal intermittently
4) Potential heavy demand on available supply
5) Excessive concentration of water wells
6) Excessive concentration of surface withdrawals
7) Improper well maintenance
8) Improper pond (dam) management
9) Water management at major construction project
10) Number of agricultural drains
11) Release of water resulting in waste

2 STATUS POSSIBILITIES:

P potential problems
- existing problems

Example:
10P Number of agricultural drains considered as potential problem

ENVIRONMENTAL EFFECTS

11 POSSIBILITIES:

1) Interference with stream flow uses resulting in:
   - a. poor aesthetics
   - b. impairment of aquatic habitat
   - c. impaired water quality
   - d. reduced waste assimilation capacity
   - e. impaired pond operation
2) Reduction of streamflows resulting in interference with downstream water uses
3) Mining of groundwater
4) Short-term lowering of water levels in the shallow groundwater zone
5) Long-term lowering of water levels in the shallow groundwater zone
6) Rebounding water table
7) Short-term discharge resulting in washout

MAIN IMPACTS

5 CATEGORY POSSIBILITIES:

1) Potential for additional water use limited
2) Special or unique features of the watercourse are damaged or altered by flows
3) Interference with withdrawal water use
4) Interference with in-stream water use
5) Other (specified)

4 AFFECTED USE POSSIBILITIES:

A) private
B) municipal
C) agricultural
D) industrial

Example:
3-A Interference with private withdrawal water use

STATUS OF WATER MANAGEMENT EFFORTS

11 CATEGORY POSSIBILITIES:

A) Water use meets requirements specified by relevant Permit, Certificate Order, standard, guideline, or criterion
B) Further action is required to bring water use under control
C) Additional regulatory programs or policies are required
D) Action may be required:
   1) affected water supplies must be restored to prior conditions
   2) alternate supply sources must be located
   3) major capital projects are required to correct situation
   4) short term water supply must be provided
E) Enforcement of regulation or policies planned or under way
F) Assessment/Monitoring of impact under way
G) Action unwarranted; charges for violations less than benefit gained
H) Resolution of issue complete

8 PROGRAM STATUS POSSIBILITIES:

1. Permit to Take Water Program
2. Water Well Management Program
3. Water Well Inspection Program
4. Streamflow (Fed/Prov Cost-Share) Program: Monitoring
5. Observation Well Program: Monitoring
6. Provincial Surface Water Quality Network: Monitoring
7. Provincial Ground-Water Quality Network: Monitoring
8. Regional Investigation Program

Example:
A)-1 The use meets assigned requirements under the Permit to Take Water Program

SURFACE AND GROUNDWATER QUANTITY EVALUATION BY TERTIARY WATERSHED

NORTHWESTERN REGION

WATERSHED NAME (NUMBER)	MAJOR WATER USES	EXISTING OR POTENTIAL PROBLEMS WITH MAJOR WATER USES	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF WATER MANAGEMENT EFFORTS
2BB Pic River, Black River, Cedar Creek Watersheds	3B-1a	3	1-a, b & c, 2	-	B-1, F-1
Comments: -	A recent gold find in the Cedar Creek area has resulted in the construction of three new mines. Permit applications for development and to process water have been received. A watershed management study has been completed. Interim permits to take water have been issued. Cedar Creek flows have been augmented. Potential conflicts in water use between industry and cottaging require resolution.				
2AC Lake Superior Tributaries (Black Sturgeon River)	2A-1c, 3	No current environmental issue		-	-
Comments: -	This watershed contains the largest fish hatchery operation in Northwestern Ontario. The watershed provides more than adequate flows and no problems are anticipated.				

NORTHWESTERN REGION (continued)

WATERSHED NAME (NUMBER)	MAJOR WATER USES	EXISTING OR POTENTIAL PROBLEMS WITH MAJOR WATER USES	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF WATER MANAGEMENT EFFORTS
2AB					
1. Thunder Bay Harbour and contributing Tributaries excluding Kaministiquia River (Lake Superior)	3A-3	8	No current environmental issue		A-1 & 6
Comments: -	A major construction project for flood control purposes has been completed on the McIntyre and Neebing Rivers. This project was exempt from the Environmental Assessment Act and was directed by the local conservation authority. No interference problems have arisen or are anticipated.				
2. Kaministiquia River and Watershed	3A-3	1, 2	1-a, b, c & d	1-D	B, F-8
	2A-3	No current environmental issue		-	-
	4A-1a	No current environmental issue		-	-
Comments: -	The Kaministiquia River is a multi-purpose source serving a variety of interests. All major intakes are presently under permit. Some problems have been experienced during dry years with Strawberry Creek, a minor tributary. Kam Aggregates Ltd., a gravel extraction and washing operation, has been making excessive seasonal demands. Company negotiations are continuing. The Kaministiquia River itself is heavily stressed from a quality standpoint owing to inadequate assimilative capacity. A major water quality survey is planned for the summer of 1986.				

NORTHWESTERN REGION (continued)

WATERSHED NAME (NUMBER)	MAJOR WATER USES	EXISTING OR POTENTIAL PROBLEMS WITH MAJOR WATER USES	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF WATER MANAGEMENT EFFORTS
5PC					
Lower Rainy River	4A-3-1a	6	-	5	A-1 & 6, F, D-3
	3A-3	2	1-a, b, c & d	1-D	A-1 & 6
	4B-1a	7	-	5 (groundwater contamination)	D-3 & 8
Comments: -	The Rainy River and associated watershed provides a number of towns with both private and municipal water supplies. Some groundwater contamination has been experienced in the Town of Barwick due to poor well construction and septic field failure. A communal sewage collection system has been constructed. A review of municipal and agricultural drains within the watershed has been conducted. No environmental problems have been encountered.				
5QC					
Red Lake,	3B-3	4-P	1-b & c	1-D	A-1 & 6
Balmer Lake	4A-3	No current environmental issue		-	-
Comments: -	Red Lake and Balmer Lake are major sources of mine process water and municipal supply for the development area of Red Lake. Due to the size of the existing drainage basin, adequate quantities are available for all uses. Routine monitoring is conducted under the Provincial Water Quality Monitoring Program.				

NORTHEASTERN REGION

WATERSHED NAME (NUMBER)	MAJOR WATER USES	EXISTING OR POTENTIAL PROBLEMS WITH MAJOR WATER USES	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF WATER MANAGEMENT EFFORTS
Geog. District	4A-3	No problems	-	-	A-1
Parry Sound	3A-3	-	-	-	A-1
Comments: -	Both municipal and industrial users draw water from large water bodies. A potential water release problem exists with the industrial water.				
Geog. District	3A-3	11-P	1-c	4-A	A-1, B, F-8
Nipissing	4A-3	No problems with large lakes	-	-	A-1
Comments: -	Both municipal and industrial users draw water from large water bodies. A potential problem exists with the release of industrial water. MacMillan Bloedel has an assimilative capacity problem as a result of insufficient water quantity. A Control Order requires the company to meet a dissolved oxygen objective of 47% saturation in the Lower Sturgeon River. MNR has developed a water management plan for the Sturgeon River that provides some augmentation of low flow conditions.				
Geog. District	3B-3	11-P	1-c	4-A	A-1
Timiskaming	4A-1a	7-P	-	3-B (short term)	A-1
Comments: -	Mineral extraction operations and subsequent water quantity usage pose potential water release problems.				

NORTHEASTERN REGION (continued)

WATERSHED NAME (NUMBER)	MAJOR WATER USES	EXISTING OR POTENTIAL PROBLEMS WITH MAJOR WATER USES	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF WATER MANAGEMENT EFFORTS
Manitoulin Island	4A-3	No problems	-	-	A-1
	3A-3	taking water from Lake Huron	-	-	A-1
	4A-1a	2	4	3	G
Comments: -	Most permitted uses draw water from Lake Huron and do not pose any problems.				
Geog. District Sudbury	3B-3	11-P	1-c	1	A-1
	4A-1a, 4A-3	1-P	4	3-B	A-1
	3A-3	8	1-d	4-B	B, F-8
Comments: -	Mineral extraction operations and subsequent water quantity usage pose potential water release problems. There is a past history of water quantity problems with respect to the Spanish River which, in turn, influence quality. A low-flow implementation study was completed on the Spanish River and a water management plan is being required by INCO and E.B. Eddy. E.B. Eddy is required to maintain dissolved oxygen at 47% downstream of Espanola.				

NORTHEASTERN REGION (continued)

WATERSHED NAME (NUMBER)	MAJOR WATER USES	EXISTING OR POTENTIAL PROBLEMS WITH MAJOR WATER USES	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF WATER MANAGEMENT EFFORTS
Geog. District Algoma	3B-3	8-P, 3	1-c, 2	1-A, 4	A-1, B, F-8
	4A-1a	1-P	5	3-B	A-1
Comments: -	The Elliot Lake area poses potential problems with regard to tailings drainage. These are controlled in part by the permit to take water program. The Sault Ste. Marie aquifer at present is totally utilized. A municipal water filtration plant is in the construction stage drawing water from Lake Superior. At Dunlop Lake, there is a problem with excessive withdrawal by Rio Algom which has resulted in a high level of public concern. Rio Algom is required to control the water level in the lake.				
Geog. District Cochrane	3B-3	11-P	1-c	4-A	A-1
	4A-1a	7-P	-	3-B (short term)	A-1
	3A-3	11	1-c	4-A, D	B,F-8
Comments: -	Mineral extraction operations and subsequent water quantity usage pose potential water release problems. In the past there has been improper maintenance of well water supplies, resulting in short term water quantity problems (i.e., Timmins, Iroquois Falls, Cochrane).				
-	Both pulp and paper mills on the Kapuskasing and Mattagami Rivers have waste assimilation problems due to insufficient flows. Reduced BOD and suspended solids loadings at Kapuskasing have improved the situation.				

SOUTHWESTERN REGION

WATERSHED NAME (NUMBER)	MAJOR WATER USES	EXISTING OR POTENTIAL PROBLEMS WITH MAJOR WATER USES	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF WATER MANAGEMENT EFFORTS
2GC					
15 Lake Erie	1A-3	2	2, 1	3-C, 1-C	A-1, G
Tributaries	1C-3	10	1	2-A & C	C
Comments: -	A substantial portion of Big Otter Creek has little to no streamflow during critical times of the year (summer irrigation season). Permits issued assume that not all irrigators will irrigate at once. Agricultural drainage has reduced base flows.				
2GF					
9 Lake Erie	1C-3	10	1	2-A & C	C
Tributaries	4B-1a	4	-	3-A & C	D-2 & 3
(central Lake Erie)					
Comments: -	Agricultural drainage has destroyed wetland areas and hence reduced base flows.				
-	The only local aquifer supplies inadequate quantity for most purposes.				

SOUTHWESTERN REGION (continued)

WATERSHED NAME (NUMBER)	MAJOR WATER USES	EXISTING OR POTENTIAL PROBLEMS WITH MAJOR WATER USES	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF WATER MANAGEMENT EFFORTS
2GH					
Essex County,	1C-3	10	1	2-A & C	C
Lake Erie	3B-1d	1	5	3, 1-A, 3-A & C	A-1, D, E
Tributaries	1A-1a	2	4	5-A, C	A-1, F
	4B-1a	4	3	-	D-2 & 3
Comments: -	Due to flat topography and tight soils, deepened watercourses are necessary for agricultural drainage. Base flows are very low. Dewatering at a large quarry has lowered water levels in private wells. Local irrigation wells affect nearby private wells. The only local aquifer supplies inadequate quantity for most purposes.				
2GD					
Upper Thames	1C-3	10	1	2-A & C	C
River	3B-1d	1	5	3, 1-A	A-1, D
Comments: -	Base flows are reduced through agricultural drainage. Dewatering at large quarries has lowered water levels in private wells.				

SOUTHWESTERN REGION (continued)

WATERSHED NAME (NUMBER)	MAJOR WATER USES	EXISTING OR POTENTIAL PROBLEMS WITH MAJOR WATER USES	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF WATER MANAGEMENT EFFORTS
2GE Lower Thames River	1C-3	10	1	2-A & C	C
Comments: -	Base flows are reduced through agricultural drainage. The only local aquifer supplies inadequate quantities for most purposes.				
2GG St. Clair River and Lake St. Clair Tributaries	1C-3 4B-1a	10 4	1 -	2-A & C 3-A & C	C D-2 & 3
Comments: -	Base flows are reduced through agricultural drainage. The only local aquifer supplies inadequate quantities for most purposes.				
2FF 18 Lake Huron Tributaries (south Lake Huron)	1C-3	10	1	2-A & C	C
Comments: -	Base flows are reduced through agricultural drainage.				

SOUTHWESTERN REGION (continued)

WATERSHED NAME (NUMBER)	MAJOR WATER USES	EXISTING OR POTENTIAL PROBLEMS WITH MAJOR WATER USES	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF WATER MANAGEMENT EFFORTS
2FE 2 Lake Huron Tributaries (Central Lake Huron)	1C-3	10	1	2-A & C	C
Comments: -	Base flows are reduced through agricultural drainage, a problem which has increased in the past decade.				
2FA Bruce Peninsula Streams					
Comments: -	The Bruce Peninsula has good hydrological conditions.				
2FB 14 Georgian Bay Tributaries (Western Georgian Bay)	1C	10, 10P	1	2-A & C	C
Comments: -	This area presently has generally good hydrological conditions. Future threats include agricultural drainage, gravel extraction, small dams and ponds, and small-scale power development.				

WEST CENTRAL REGION

WATERSHED NAME (NUMBER)	MAJOR WATER USES	EXISTING OR POTENTIAL PROBLEMS WITH MAJOR WATER USES	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF WATER MANAGEMENT EFFORTS
2HB					
Lake Ontario and	3B-1d	1	5	3-A	A-1, F
Hamilton Harbour	3C-1d	9-P	5, 4	3-A	B-2, C
	1A-2 &-3	6-P	2	4-C	A-1

Comments: -
The major quarry dewatering operations are Steetley Industries and Flamborough Quarries. Steetley has been expanding and has caused a large number of well interference problems. Monitoring is under way and resolution of problems is being carried out. Both quarries are proposing further expansion.

- Excavations for sewers and watermains in Ancaster and Waterdown have caused interference with private water supplies in areas which are not serviced. In some cases where interference is caused by gravity drainage, resolutions of complaints could be difficult to implement since permits are not required.

- Grindstone Creek drains market garden lands which are irrigated. Drought and low flow periods occasionally result in water use conflicts.

WEST CENTRAL REGION (continued)

WATERSHED NAME (NUMBER)	MAJOR WATER USES	EXISTING OR POTENTIAL PROBLEMS WITH MAJOR WATER USES	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF WATER MANAGEMENT EFFORTS
2HA					
Western Lake Ontario	3B-1d	1 & 1P	5	3-A	A-1, E, F
Tributaries, Niagara	3C-1d	9, 11 & 11P	5, 4	3-A, 1-A	B-2, C
River and Eastern Lake Erie Tributaries	3A-1a	3	4	3-A	A-1

Comments: - There are a large number of major limestone quarries and some gravel pits in this drainage area. Many of these cause water supply interference since pumping is needed to keep the quarries dry. The major quarries are Vineland, Lincoln, Port Colborne, R.E. Law (Hardrock P'V'G.), Ridgeway (Walker Bros.), Campbell (Walker Bros.). The major gravel pit operations using wells are Steed and Evans and Telephone City Gravel in Fonthill. Each one of these operations needs monitoring and surveillance since expansion and deepening of pits and quarries can result in unpredicted interference.

- Construction dewatering or drainage due to urban expansion has caused lowering of groundwater levels when water and sewage services have been installed in deep trenches. Some trenches intersect the water table and drain shallow aquifers. Such interference problems have occurred in the Hamilton/Stoney Creek area (Satellite City) and in Port Colborne.

- Water supply restoration requirements are difficult to implement since legislation is not explicit and permits may not be needed since many of the problems are due to gravity drainage.

WATERSHED NAME (NUMBER)	MAJOR WATER USES	EXISTING OR POTENTIAL PROBLEMS WITH MAJOR WATER USES	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF WATER MANAGEMENT EFFORTS
2GA Upper Grand River	4A-1a	1, 4, 5	1-a,b, 2, 3, 5	1-A, 2, 3, 4	A-1, F
	3A-1a	1	1-b,c,d&e, 2, 5	1, 2, 4	A-1, F
	3B-1d	1	1-b,c,d&e, 2, 5	1, 2, 4	A-1, F
	3C-1c	9P	4	3-A	C-5 & 8

Comments: - All municipal water supplies in the Upper Grand River Basin are groundwater sources. Withdrawals of groundwater have resulted in all types of interference and effects. Some industries have caused excessive water level lowerings by pumping wells and gravel pits. The Regional Municipality of Waterloo has an extensive water level monitoring program to aid in water quantity management. Major impacts on water levels and streams have been recorded and have required resolution. As water supplies are developed, additional problems can be anticipated. Smaller municipalities on water wells do not have adequate groundwater management programs and unexpected problems result.

2GB Lower Grand River	3B-1d	1	5	3-A, 5-A	A-1, F, E

Comments: - The quarry dewatering at Dunnville Rock Products has been carried out for more than 30 years and water level conditions are essentially stable. Natural seasonal variation in water levels has resulted in a complaint of pond water level interference which requires long-term evaluation. There are no other major groundwater withdrawals in this area.

WEST CENTRAL REGION (continued)

WATERSHED NAME (NUMBER)	MAJOR WATER USES	EXISTING OR POTENTIAL PROBLEMS WITH MAJOR WATER USES	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF WATER MANAGEMENT EFFORTS
2GC 15 Lake Erie Tributaries	1A-3 3B-1d	2P, 4, 1P, 3P	2,1-b, 1-e 4, 5	1-A, 3-A	A-1, E-8

Comments: - Tobacco farmers may irrigate heavily to save their crops during drought and may cause stoppage of streamflow. Serious effects have been experienced by the downstream property owners. Fines of $200 for a day's violation are considered reasonable by farmers to save a $100,000 tobacco crop.

- Limestone quarries south of Hagersville, east of Jarvis and north of Port Dover pump water to keep operations dry. This causes lowering of water levels and interference with wells.

CENTRAL REGION

WATERSHED NAME (NUMBER)	MAJOR WATER USES	EXISTING OR POTENTIAL PROBLEMS WITH MAJOR WATER USES	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF WATER MANAGEMENT EFFORTS
2HK Upper Trent River	5A, 4B, 4A	-	-	-	A
Comments: -	No surface water quantity problems presently exist in the upper reaches of the Trent River basin.				
2HG Scugog River	6A, 5A	4-p	1-a, b,c,& d	1, 4	D-3, 8
Comments: -	The Lindsay WPCP discharges to a wetland area which drains to the Scugog River. The wetland provides additional treatment for the effluent. If the effluent were to discharge directly to the Scugog River, the assimilative capacity would be exceeded. Thus the potential for streamflow shortage exists.				
-	Flows are being studied as part of Sturgeon Lake nutrient budget study (See Appendix G).				

CENTRAL REGION (continued)

WATERSHED NAME (NUMBER)	MAJOR WATER USES	EXISTING OR POTENTIAL PROBLEMS WITH MAJOR WATER USES	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF WATER MANAGEMENT EFFORTS
2HC Lake Ontrio Tributaries					
1. Etobicoke-Pickering	4A-1a	4	3	1	A, D-3
	2A	1, 11	4, 5	3	D, E
	4A-1a	7(abandoned wells)	6	5	B

Comments: - The major well fields in the area are at Richmond Hill (Oak Ridges) and Bolton. The Regions of York and Peel, in co-operation with MOE, are setting up monitoring programs of the well fields to evaluate aquifer performance (degree of mining) so future development can properly be planned.

- At Ringwood, development of new water supplies for fish hatcheries and golf courses are affecting flowing wells in the area. The administration of Permit to Take Water program is effectively controlling the equitable uses of groundwater resources in the area.

- Special problems are being encountered in the Richmond Hill and Markham areas. Water in these municipalities is now supplied by the York-Durham system, thus the former municipal wells in Richmond Hill and Markham have been abandoned. Due to the cessation of pumping, the water table is rebounding, and in low lying areas the increasing water table is causing wet basements, new springs and drainage problems. Reactivation of some of the former municipal wells may have to be considered to resolve those problems related to the excessively high water table levels.

- A test drilling program successfully located two additional wells for the community of Orono.

WATERSHED NAME (NUMBER)	MAJOR WATER USES	EXISTING OR POTENTIAL PROBLEMS WITH MAJOR WATER USES	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF WATER MANAGEMENT EFFORTS
2HC (continued)					
2. Stouffville Creek	6A, 3	4	1-a, b, c & d	4-A & D	F
Comments: -	The treated effluent from the Stouffville WPCP discharges to Stouffville Creek. The minimum flow available for sewage assimilation is less than the effluent discharge rate. A streamflow shortage exists in Stouffville Creek. The C. of A. for the Stouffville WPCP stipulates effluent criteria based on the receiving water quality in Ressor Creek, into which Stouffville Creek discharges.				
2HB					
Lake Ontario Tributaries					
1. Burlington-Etobicoke	3B-1d	1	3	1, 3	A, D & E
	4A-1a	1	1-d	5	B, C
	6A-1a	1	1-d	5	B, C
Comments: -	There are two major limestone quarries and some smaller ones in this drainage area. In the two major quarries - the Nelson Quarry in Burlington and the Milton Quarry in Milton- dewatering is needed to facilitate the extraction of limestone. Major groundwater interference is being caused by the dewatering especially in the Nelson Quarry area. Regular monitoring of water levels in the vicinity gives information to evaluate the extent and seriousness of interference. Decisions to replace affected water supplies are based on the evaluation of that data. A number of wells have been replaced to date.				
-	In the Halton Hills area, future proposed development puts a strain on existing well supplies. Development of new well water supplies is expected to have a serious effect on the baseflow in Black Creek which in turn would seriously affect the already restricted assimilative capacity of that watercourse. Additional standby wells have been developed in the northern part of Halton Hills.				

CENTRAL REGION (continued)

WATERSHED NAME (NUMBER)	MAJOR WATER USES	EXISTING OR POTENTIAL PROBLEMS WITH MAJOR WATER USES	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF WATER MANAGEMENT EFFORTS
2HB (continued)					
2. Credit River	6A-3	4	1, a, b, c & d	1-A, & D	F
	4A	4	1d, 5	4-A, & D	
				3	F
Comments: -	The treated effluent from the Acton WPCP discharges to Black Creek and the effluent from the Georgetown WPCP to the Credit River west branch. Both plants are operating below capacity, but even at the present discharge rates, the effluents are equal to or greater than the estimated minimum streamflows. Water quality data downstream from these plants do not meet the Provincial Water Quality Objectives periodically. When the capacity of each plant is reached, a potential water quantity problem may arise. There are pressures for further development in these municipalities with the associated increase in effluent discharge rates. Additional development of groundwater supplies is planned in the Georgetown area. Test drilling locations have been selected to minimize potential impact of pumping on the baseflow of Black Creek and local well water users.				
3. Oakville Creek	6A-3	4-P	1-a, b, c & d	1-A, 1-D 4-A, 4-D	F
Comments: -	A stream diversion at a quarry above the Halton Hills and Kelso reservoirs is planned. An inter-Ministry and Conservation Authority team will review the proposal. There is concern that the proposed diversion will result in a by-passing of flow at the Halton Hills reservoir and cause insufficient baseflow for effluent assimilation in Oakville Creek from the Milton STP.				

WATERSHED NAME (NUMBER)	MAJOR WATER USES	EXISTING OR POTENTIAL PROBLEMS WITH MAJOR WATER USES	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF WATER MANAGEMENT EFFORTS
2ED Georgian Bay Tributaries (Innisfil - Bailey Creek)	1A-3	2-P	2	3-C, 4-A	B

Comments: - Streamflow depletion due to extraction of irrigation water from Bailey Creek was experienced in 1983.
- A proposal has been received to discharge STP effluent from Cookstown to Innisfil Creek.

2EC 1.	Lake Simcoe Basin	4A, 5A	4	3	1	A, B, D & E

Comments: - The major well fields in the area are at Aurora, Newmarket (Region of York) and Barrie. The Region of York, in cooperation with the Ministry of the Environment, has set up a comprehensive monitoring program of the respective well fields to evaluate aquifer performance (degree of mining) to enable the respective municipalities to plan future development and water use.
- The City of Barrie is increasing its monitoring program to evaluate aquifer performance (degree of mining). The data will help to plan future development of new well fields and will be very useful in resolving future interference complaints.
- The diversion scheme to remove treated effluent from the Newmarket and Aurora sewage treatment plants was completed in June 1984. The sewage flows from these towns are now pumped to the Duffin Creek STP. The base flow of the Holland River has been substantially reduced.
- A groundwater exploration program started in Innisfil Township at the western shore of Lake Simcoe to determine whether groundwater is a viable alternative to resolve the water supply problems along the shore of Lake Simcoe.
- A test drilling program has been carried out to develop additional groundwater supplies for the Town of Bradford.

CENTRAL REGION (continued)

WATERSHED NAME (NUMBER)	MAJOR WATER USES	EXISTING OR POTENTIAL PROBLEMS WITH MAJOR WATER USES	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF WATER MANAGEMENT EFFORTS
2EC (continued)					
2. Severn River	5A, 4A	11, 10	1-c, b & a	1-b, c, d	E & F
	6A	3	2	4-a	E & F
Comments: -	Water quantity problems exist seasonally in the Severn River due to the operation of dams by Ontario Hydro and locks by the Trent-Severn Waterway. A Watershed Study Committee has recommended possible solutions. The LSEMS and CORTS water management programs have been undertaken with Cabinet approval.				
2EB					
Moon River and Go Home River	5A, 4A, 4B	-	-	-	A
Comments: -	No surface water quantity problems presently exist in this basin.				

SOUTHEASTERN REGION

WATERSHED NAME (NUMBER)	MAJOR WATER USES	EXISTING OR POTENTIAL PROBLEMS WITH MAJOR WATER USES	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF WATER MANAGEMENT EFFORTS
2MC Lower St. Lawrence Tributaries					
(Raisin River &	5A	No problems	-	-	A
Delisle River)	4A, 3A	4	1-d	1	Other
	6A	4	1-c	1	Other

Comments: - No water quantity problems exist in the Raisin River basin.
- Flows in the Delisle River are controlled by the Town of Alexandria by virtue of water rights. The town obtains its water supply from the river. The town's sewage lagoons discharge continuously to the river and at times dilution flow is practically non-existent. There is little potential for management of flows to provide assimilation augmentation. Additional waste treatment is being considered to improve stream water quality.

2MA Western St. Lawrence Tributaries					
(Cataraqui River &	5A	No problems	-	-	A
Gananoque River)	5A	No problems	-	-	A

Comments: - No water quantity problems exist in the Cataraqui or Gananoque River basins.

SOUTHEASTERN REGION (continued)

WATERSHED NAME (NUMBER)	MAJOR WATER USES	EXISTING OR POTENTIAL PROBLEMS WITH MAJOR WATER USES	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF WATER MANAGEMENT EFFORTS
2LB					
South Nation River	4A-3	4-P	-	1-B	D2
	1C	10-P	2, 1d	3-B	D2
	4A-1a	4-p	-	3	D1-1
	6A	4-p	1b	5	D3-1
	4A-1b	4-p	-	3	F

Comments: - The South Nation River basin has an extensive and still expanding network of agricultural outlet drains. The Casselman water supply is drawn from the river and further reduction to the low flows at Casselman could become critical. The South Nation River Basin Study has attempted to deal with this issue. Test drilling for additional municipal supplies continues, but some private wells should also be restored. Water shortages are experienced with private servicing of new subdivisions. Plan reviews are required. A new municipal well servicing Winchester has interfered with private wells. These supplies have now been restored.

2LA					
Rideau River	4A-3	-	-	-	A
	6A	-	-	-	A
	5A	-	-	-	A

Comments: - No water quantity management problems exist or are anticipated. Flows are regulated by the Rideau Canal Authority.

SOUTHEASTERN REGION (continued)

WATERSHED NAME (NUMBER)	MAJOR WATER USES	EXISTING OR POTENTIAL PROBLEMS WITH MAJOR WATER USES	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF WATER MANAGEMENT EFFORTS
2KF Mississippi River	4A-3	-	-	-	A
	6A	-	-	-	A
	5A	-	-	-	A
Comments: -	No water quantity management problems exist or are anticipated. Flows are regulated by the Ontario Hydro and the Mississippi River Conservation Authority.				
2KD, 2KE Madawaska River	4A	-	-	-	A
	5A	-	-	-	A
	6A	-	-	-	A
Comments: -	No significant water quantity management problems exist or are anticipated. Flows are regulated by Ontario Hydro for power generation.				
2KC Bonnechere River	5A	-	-	-	A
	6A	-	-	-	A
Comments: -	No existing problems. It is anticipated that a methanol plant will be constructed near Renfrew with discharges which will stress the river's assimilation capacity.				

SOUTHEASTERN REGION (continued)

WATERSHED NAME (NUMBER)	MAJOR WATER USES	EXISTING OR POTENTIAL PROBLEMS WITH MAJOR WATER USES	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF WATER MANAGEMENT EFFORTS
2K, 2L					
Ottawa River	4A	-	-	-	A
	5A	-	-	-	A
	6A	-	-	-	A
Comments: -	No water quantity management problems exist or are anticipated. River flows are regulated by Ontario Hydro and Quebec Hydro.				
2HM					
Eastern Lake Ontario Tributaries					
1. Napanee River	6A, 3A 6B, 5A	No problems	-	-	A
Comments: -	The Napanee Conservation Authority regulates river flows for recreation and low flow augmentation. Strathcona Paper utilizes the assimilation capacity of the river. The Strathcona discharge is regulated to the river flows.				
2. Millhaven Creek	5A	8	2	3A	B
	4A	No problems	-	1	A
	4B	" "	-	1	A
	6A	" "	-	1	A
	6B	" "	-	1	A
Comments: -	The Cataraqui Conservation Authority regulates the flow for recreation, municipal water supply and assimilation augmentation. Discharges from two ponds in the Township of Ernestown have resulted in interference with downstream water takings and waste assimilation. A water management plan is required and is being pursued.				

SOUTHEASTERN REGION (continued)

WATERSHED NAME (NUMBER)	MAJOR WATER USES	EXISTING OR POTENTIAL PROBLEMS WITH MAJOR WATER USES	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF WATER MANAGEMENT EFFORTS
2HL					
Moira River	5A	No problems	-	-	A
	4B, 1-1a	4	4	3	F
	4B	No problems	-	-	A
Comments: -	Water well interference has occurred in the past at the Village of Madoc and could happen again because a new production well is being installed. The Village has made arrangements to supply water to affected private well owners.				
2HE					
Prince Edward County Streams	1A-3	6-P	2, 1-b	1, 3-C	B
Comments: -	Many large cash cropping farms in Prince Edward County rely heavily on small streams and stream ponds for irrigation water. Interference complaints arise occasionally. It is suspected that water taking frequently occurs without permit or in excess of authorized limits. A major effort would be required to identify all takings and to formulate a fair sharing formula.				

SOUTHEASTERN REGION (continued)

WATERSHED NAME (NUMBER)	MAJOR WATER USES	EXISTING OR POTENTIAL PROBLEMS WITH MAJOR WATER USES	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF WATER MANAGEMENT EFFORTS
2HD Lake Ontario Tributaries (Mayhew Creek)	1A-2a	3-P	2, 1-c	3-B, 1	A-2 & 8
	3A-2a	4-P	2, 1-c	3-B, 1	A-2 & 8
	4A-2a, 1a	4-P	1-e	1, 5 (potential water shortage)	A-2 & 8
	5A-2a	8-P	2, 7	1, 3-B, C,D	H

Comments: - Mayhew Creek is a small stream with a limited base flow and intense competition between recreational, industrial, agricultural and municipal water users. At present, the users are sharing water in accordance with an agreement formulated by the Region. An extended drought would require careful monitoring.

SURFACE AND GROUNDWATER QUANTITY EVALUATION SUMMARY

The chart below summarizes the number of the 144 tertiary watersheds in the Province with major impacts resulting from excessive water withdrawals. Individual watersheds may be affected by more than one impact.

	1983-84	1984-85	1985-86 Planned	1985-86 Actual
No. of watersheds with limitations on additional water use	21	16	21	22
No. of watersheds with damage or alteration to special or unique features resulting from low flows	11	2	11	10
No. of watersheds having interference with water withdrawals	22	17	22	24
No. of watersheds having interference with in-stream water uses	15	5	15	11
No. of watersheds with other impacts	6	4	6	7

APPENDIX D

INVENTORY OF INDUSTRIAL FACILITIES CURRENTLY SUBJECT TO MBR APPRAISAL

A. PULP AND PAPER MILLS

Abitibi-Price - Thunder Bay
Abitibi-Price - Fort William
Abitibi-Price Provincial - Thunder Bay
Great Lakes Forest Products - Thunder Bay

Domtar - Red Rock

Kimberly-Clark - Terrace Bay

James River Marathon Ltd. - Marathon

Boise-Cascade - Kenora

Great Lakes Paper - Dryden

Boise-Cascade - Fort Frances

Abitibi-Price - Iroquois Falls

St. Mary's Paper Inc. - Sault Ste. Marie

Waferboard Corporation - Smooth Rock Falls

Spruce Falls Power and Paper - Kapuskasing

Eddy Forest Products Ltd. - Espanola

Fraser Inc. - Thorold
Beaver Wood Fibre Co. Ltd. - Thorold
Domtar Fine Papers Ltd. - St. Catharines
Domtar Construction Ltd. - Thorold
Kimberly-Clark - St. Catharines
Ontario Paper - Thorold

Atlantic Packaging - Scarborough
Canadian International Paper - Toronto
Domtar Fine Papers - Toronto
Domtar Packaging - Toronto
Belkin Paper Board - Toronto

Kimberly-Clark - Huntsville

Trent Valley Paper - Glen Miller

Domtar Packaging - Trenton

Strathcona Paper - Camden East Twp.

Domtar - Cornwall

E. B. Eddy - Ottawa

B. IRON AND STEEL MILLS

Algoma Steel - Sault Ste. Marie

Algoma Steel - Wawa

Dofasco - Hamilton
Stelco - Hamilton
Slater Steel (Burlington Steel Div.) - Hamilton
Stanley Steel (cold rolled strip steel)
- Hamilton Div.
Union Drawn Steel - Hamilton

Atlas Steel - Welland

Stelco - Nanticoke

Canada Alloy Castings - Kitchener

Eastern Steel Castings - L'Orignal

Lake Ontario Steel - Whitby

C. PETROLEUM REFINERIES

Imperial Oil - Sarnia
Shell Oil - Corunna
Sunoco - Sarnia
Petrosar - Corunna

Texaco - Nanticoke

Petro Canada Inc. - Mississauga

Petrocan Products Inc. - Oakville

D. METAL MINES

Dickenson Mines - Balmertown
Campbell Red Lake Mines - Balmertown
Stelco (Griffith Mine) - Ear Falls Twp.
Mattabi Mines - Ignace

Inco - Lower Shebandowan Lake

Noranda Mines - Manitouwadge

Pamour Porcupine Mines (Schumacher Division)
- Timmins Area
Pamour Porcupine Mines (Noranda) - Timmins Area
Dome Mines - Timmins Area
Kidd Creek Mine - Timmins

Lac Minerals - Kirkland Lake

Kerr Addison Mines - Virginiatown

Agnico (Eagle Mines) - Cobalt
Sulpetro Minerals Ltd. (Canadaka Mines Div.)
- Colbalt

Sherman Mines - near Temagami

Inco - Garson Mine
- Copper Cliff Creek Plant
- Nolin Creek Plant

Falconbridge - Strathcona Mines

Rio Algom (Stanleigh) - Elliot Lake
Rio Algom (Quirk Mine) - Elliot Lake
Rio Algom (Panel Mine) - Elliot Lake
Denison Mines - Elliot Lake

E. NON-FERROUS SMELTERS

Kidd Creek - Timmins

Inco (Nickel Refinery) - Sudbury
Inco (Iron Ore Reduction Plant) - Sudbury
Falconbridge - Sudbury

Agnico (Eagle Mines) - Cobalt

Inco - Port Colborne

Eldorado Nuclear - Port Hope

Chromasco - Haley Station

F. CEMENT MANUFACTURERS

Canada Cement Lafarge - Woodstock
Federal White Cement - Woodstock

St. Mary's Cement - St. Mary's

St. Lawrence Cement - Mississauga

St. Mary's Cement - Bowmanville

Lake Ontario Cement - Picton

Canada Cement Lafarge - Bath

G. FOSSIL FUELLED THERMAL GENERATING STATIONS

Atikokan G.S. - Atikokan

Thunder Bay G.S. - Thunder Bay

Lambton G.S. - Sarnia

J. C. Keith G.S. - Windsor (mothballed)

Nanticoke G.S. - Nanticoke

Lakeview G.S. - Mississauga
R. L. Hearn G.S. - Toronto (mothballed)

H. FISH PRODUCTS

McLean Bros. Fisheries - Wheatley
Omstead Foods Ltd. - Wheatley

Erieau Packers Ltd. - Erieau

I. PLASTICS AND SYNTHETIC RESINS

DuPont of Canada Ltd. - Corunna

A. Schulman Inc. - St. Thomas

Oxy-Durez (Hooker) - Fort Erie

B.F. Goodrich - Niagara Falls

Polysar Ltd. (Kayson Plastics Div.) - Cambridge

St. Lawrence Resin Products Ltd. - Cayuga

Bakelite Thermosets Ltd. - Belleville

Celanese Canada Inc. - Millhaven

J. INDUSTRIAL CHEMICALS

Reichold Chemicals - Thunder Bay

Inco Ltd. (Sulphur Products Dept., IORP)
- Sudbury

Ethyl Corp. - Corunna
C.I.L., Agricultural Chem. Division - Lambton
Cabot Carbon of Canada Ltd. - Sarnia
Dow Chemical of Canada Ltd. - Sarnia
Esso Chemical Ltd. - Sarnia
Polysar Ltd. - Sarnia
Union Carbide (N-70 Gas Products Plant) - Sarnia
Welland Chemical Ltd. - Sarnia
Dome Petroleum - Sarnia

Allied Chemical Canada Ltd. - Amherstburg

Cyanamid Welland Plant - Niagara Falls

Sulco Chemical Ltd. - Elmira
Uniroyal Ltd. - Elmira

Columbian Chemicals Canada Ltd. - Hamilton

Dupont - Maitland
Nitrochem Inc. - Maitland

Dussex Campell Ltd. - Belleville

BASF Canada Ltd. - Cornwall
Cornwall Chemicals Ltd. - Cornwall
C.I.L. - Cornwall
B.C.L. of Canada Ltd. - Cornwall
Courtaulds Ltd. - Cornwall

Alcan - Ottawa

Chinook Chemical - Sombra Twp.

K. ABRASIVES

Dresser Industries Canada Ltd. - Brantford
Norton Co. - Brantford

Norton Co. - Niagara Falls
General Abrasives (Carpenter Works)
- Niagara Falls
SOHIO - Niagara Falls

Exolon Co. of Canada Ltd. - Thorold

Unicorn Abrasives of Canada Ltd. - Brockville

L. METAL STAMPING, PRESSING AND COATING

Carnation Inc. - Aylmer

Central Stamping Ltd. - Windsor
Fabricated Steel Products (Windsor) Ltd. - Windsor

Corrugated Pipe Co. Ltd. - Stratford
Jones Manufacturing Co. Ltd. - Stratford

Leigh Metal Products Ltd. - London

H. J. Heinz Co. of Canada Ltd. - Chatham

Excell Stamping - Guelph

American Can Canada Inc. - Hamilton
G.S.W. Inc. - Hamilton

American Can Canada Inc. - Simcoe

Electrohome Ltd. - Kitchener
Jacmorb Manufacturing Ltd. - Kitchener
Pano Cap (Canada) Ltd. - Kitchener

Canada Tool Co. Ltd. - Cambridge
Butler Metal Products Co. Ltd. - Cambridge
Preston Metal & Roofing Prod. Ltd. - Cambridge
Brute Mfg. Ltd. - Cambridge.

Seneca - St. Catharines
Tri-Sure Products Ltd. - St. Catharines

Canadian Rosing Plate - Niagara Falls

Canadian Cylinder Co. - Brantford
Lockwood Manufacturing Inc. - Brantford
Magnetic Metals Ltd. - Brantford

Agway Metals Inc. - Mississauga
Esselte Pendaflex Canada Inc. - Mississauga
Gaylord Regethermic Canada Ltd. - Mississauga
Indal Limited - Mississauga
Kaiser Aluminum & Chemical Canada Inc. - Mississauga
Premier Metal Industries Ltd. - Mississauga
Samuel Strapping Systems Ltd. - Mississauga

Tye-Sil Industries Ltd. - Tottenham

Hayes-Dana - Barrie
West Bend of Canada Ltd. - Barrie

Decon Metals - Midland

Ajax Precision Manufacturing Ltd. - North York
F & K Manufacturing Ltd. - North York

Alcan Canada Products Ltd. (Algoods) - Scarborough

Beach Industries Ltd. - Smiths Falls

Selkirk Metalbestos - Brockville

Ideal Roofing Co. Ltd. - Ottawa
Koppers International Canada Ltd. - Ottawa
Rideau Aluminium & Steel Ltd. - Ottawa
Royal Canadian Mint - Ottawa

Stelco - Gananoque

Quest-Tech Precision Inc. - Belleville
Stewart Warner Corp. of Canada - Belleville

M. LIME MANUFACTURING

BeachviLime Ltd., - Beachville
Domtar Inc. - Beachville

Stelco Inc. (Chemical Lime Works) - Ingersoll

Allied Chemical Canada Ltd. - Amherstburg

BeachviLime Ltd. (Guelph Dolime Ltd) - Guelph

Steetley Industries Ltd. - Hamilton

N. MEAT PROCESSING

Ontario Rendering Co. Ltd. - Dundas

Comfort and Tylee Ltd. - St. Anns

Star Brand Packers - Binbrook

Highland Packers Ltd. - Vinemount

Hoffman Meats Ltd. - Kitchener

O. POULTRY PROCESSING

Port Colborne Poultry Ltd. - Port Colborne

J.M. Schneider - Ayr

Tend-R-Fresh - Petersburgh

Multifoods Ltd. - Dundas

Maple Lodge Farms Ltd. - Norval

Beatty Farms Ltd. - Thamesford

Cuddy Food Products Ltd. - London

P. AUTOMOBILE MANUFACTURING

General Motors of Canada Ltd. - St. Catharines

Ford Motor Co. of Canada Ltd. - Oakville

Chrysler Canada Ltd. - Windsor

Ford Motor Co. of Canada Ltd. - St. Thomas

International Harvester of Canada Ltd. - Chatham

Q. MISCELLANEOUS

Borg Warner Chemicals - Cobourg

Domtar Chemical Group - Orillia

Thane Dev. Ltd. - Keswick

Abex Industries Ltd. - Lindsay

Fittings (Foundry) - Oshawa

Raybestos Canada Ltd. - Peterborough

Fiberglass Ltd. - Sarnia
Partek Industries - Sarnia

Mitsubishi Electronics Canada - Midland

APPENDIX E

MBR EVALUATION OF INDUSTRIAL FACILITIES

SECTOR: **IRON AND STEEL MILLS**

S.I.C. No: 291

	1979	1980	1981	1982
No. of Facilities:	22	23	23	23
Capacity:	----------	Not Available	----------	
Production:				
Pig Iron (Million Mg)	10.9	10.9	9.7	8.0
Steel ingots (Million Mg)	15.9	15.7	14.6	11.8
Estimated Capital Expenditure for Environmental Protection ($ Millions)	0.8(Air) 15.4(Water)	43.2(Air) 14.7(Water)	38.5(Air) 53.9(Water)	4.9(Air) 3.0(Water)

Notes: No. of Facilities: Figures prior to 1984 from Statistics Canada Catalogue 41-203 (Annual)
Production: Figures prior to 1984 from Statistics Canada Catalogue 41-001 (Monthly). of Ontario, and the majority of steel ingot production is in Ontario.
Estimated Capital Expenditures: Applications for Certificates of Approval, Environmental Approvals and

EMISSIONS	1979	1980	1981	1982
Air Emissions (Mg/day):				
Particulates	29 (7)*	30 (9)	25 (9)	22 (7)
Sulphur Dioxide	32 (7)	444 (11)	564 (9)	290 (7)
Nitrogen Oxides				
Noise				
Direct Discharges to Watercourses (Mg/day):				
Oxygen Demand	13 (6)	9.3 (6)	11 (7)	7.9 (7)
Suspended Solids	90 (7)	45 (7)	55 (7)	34 (7)
Ether Solubles	6.3 (7)	6.4 (7)	5.9 (7)	1.9 (7)
Phenols	0.45 (6)	0.41 (6)	0.42 (7)	0.28 (7)
Ammonia	11 (5)	12 (6)	7.7 (5)	6.0 (6)
Cyanide	2.8 (5)	1.1 (6)	0.73 (5)	0.27 (6)
Heavy Metals	22 (7)	13 (7)	11 (7)	13 (7)
Phosphorus				
Chromium				
Cadmium				

* Numbers in brackets represent the number of facilities contributing to measured emissions/discharges.

1983	1984	1985
23	23	23
-------- Not Available ---------		
8.6	9.6	9.6
12.7	14.6	14.5
.02 (Air)	N/A	N/A
20.2 (water)	N/A	N/A

"Iron and Steel Mills".
Although the figures reported are national totals, there are no known producers of pig iron outside

Land Use Planning Branch, Ministry of the Environment.

1983	1984	1985 Planned	1985 Actual
22 (9)	24 (7)	23 (9)	11 (6)
356 (6)	552 (1)	661 (6)	469 (6)
N/A	9.5 (1)	N/A	27 (3)
9.0 (7)	8.9 (3)	8.9 (6)	3.3 (4)
37 (7)	41 (6)	34 (7)	37 (6)
3.1 (6)	5.4 (5)	3.0 (6)	5.0 (5)
0.19 (4)	0.16 (5)	0.20 (4)	0.14 (5)
4.8 (5)	5.2 (4)	5.3 (5)	4.7 (4)
0.27 (5)	0.26 (4)	0.22 (4)	0.14 (4)
12 (9)	15 (6)	11 (7)	10 (6)
N/A	.0009 (2)	N/A	N/A
N/A	.001 (1)	N/A	N/A
N/A	.00004 (1)	N/A	N/A

No. of Facilities in Ontario in 1985 based on Statistics Canada data : 23
Corrected No. of Facilities used for MBR evaluation (listed in Appendix D) : 12
No. of Facilities with a direct discharge to a watercourse in 1985 : 6
No. of Facilities with air emissions in 1985 : 10

Contaminant	No. of Assessable Facilities	FORECAST 1985 COMPLIANCE		
		No. of Facilities which were Expected to be Substantially in Compliance with Environmental Objectives	No. of Facilities which were NOT Expected to be Substantially in Compliance with Environmental Objectives	No. of Facilities where Compliance was Not Forecast
Particulates	12	7	4	1
Sulphur Dioxide	12	10	0	2
Nitrogen Oxides	N/A	N/A	N/A	N/A
Noise	12	9	0	3
Oxygen Demand	7	6	0	1
Suspended Solids	7	6	1	0
Ether Solubles	7	6	0	1
Phenols	7	4	2	1
Ammonia	7	5	1	1
Cyanide	7	5	1	1
Heavy Metals	7	4	2	1
Phosphorus	N/A	N/A	N/A	N/A
Chromium	N/A	N/A	N/A	N/A
Cadmium	N/A	N/A	N/A	N/A

No. of Assessable Facilities	ACTUAL 1985 COMPLIANCE		
	No. of Facilities which were Substantially in Compliance with Environmental Objectives	No. of Facilities which were NOT Substantially in Compliance with Environmental Objectives	No. of Facilities where Compliance was Unknown
6	3	0	3
6	4	0	2
3	1	0	2
2	2	0	0
4	4	0	0
6	2	3	1
5	4	1	0
5	3	2	0
4	3	1	0
4	3	1	0
6	4	1	1
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A

Abatement Measures for Non-complying Facilities

- Control Orders or other abatement programs are in effect for all facilities in non-compliance with objectives or criteria.

SECTOR: **PULP AND PAPER MILLS**

S.I.C. No: 271

	1979	1980	1981	1982
No. of Facilities:	37	36	36	36
Capacity:	---------- Not Available ----------			
Production:				
Woodpulp (Million Mg)	4.3	4.4	4.4	3.8
Basic paper and paper boards (Million Mg)	3.5	3.2	3.5	3.2
Estimated Capital Expenditure for Environmental Protection ($ Millions)	1.4(Air) 43.9(Water)	6.6(Air) 25.2(Water)	11.7(Air) 34.5(Water)	11.5(Air) 19.8(Water)

Notes: No. of Facilities and Production: Figures from Statistics Canada Catalogue 36-204 (Annual) "Pulp and

Estimated Capital Expenditures: From Applications for Certificates of Approval, Environmental Approvals

EMISSIONS	1979	1980	1981	1982
Air Emissions (Mg/day):				
Particulates		57 (28)	79 (24)	64 (21)
Sulphur Dioxide			8.0 (3)	49 (18)
Total Reduced Sulphur				
Direct Discharges to Watercourses (Mg/day):				
Oxygen Demand	779 (28)	728 (28)	723 (28)	661 (28)
Suspended Solids	248 (28)	199 (28)	170 (28)	125 (28)
Toxicity				N/A
Bacteria				
Phosphorus				

1983	1984	1985
35	35	35
--------- Not Available ---------		
	4.2 (est.)	N/A
	3.4 (est.)	N/A
	6.3 (Air)	N/A
	0.4 (Water)	N/A

Paper Mills".

and Land Use Planning Branch, Ministry of the Environment.

1983		1984		1985 Planned		1985 Actual	
55	(13)	35	(10)	45	(13)	15	(9)
38	(8)	32	(6)	43	(9)	10	(6)
7.1	(1)	0.5	(1)	0.5	(1)	0.9	(2)
439	(27)	377	(27)	381	(27)	317	(26)
114	(26)	99	(28)	105	(26)	97	(26)
N/A		N/A		N/A		N/A	
N/A		N/A		N/A		N/A	
N/A		N/A		N/A		2.5	(10)

No. of Facilities in Ontario in 1985 based on Statistics Canada data : 35
Corrected No. of Facilities used for MBR evaluation (listed in Appendix D) : 27
No. of Facilities with a direct discharge to a watercourse in 1985 : 27
No. of Facilities with air emissions in 1985 : 25

Contaminant	No. of Assessable Facilities	FORECAST 1985 COMPLIANCE		
		No. of Facilities which were Expected to be Substantially in Compliance with Environmental Objectives	No. of Facilities which were NOT Expected to be Substantially in Compliance with Environmental Objectives	No. of Facilities where Compliance was Not Forecast
Particulates	34	29	2	3
Sulphur Dioxide	34	25	0	9
Total Reduced Sulphur	34	1	0	33
Oxygen Demand	25	22	2	1
Suspended Solids	27	25	2	0
Toxicity	27	8	12	7
Bacteria	N/A	N/A	N/A	N/A
Phosphorus	N/A	N/A	N/A	N/A

No. of Assessable Facilities	ACTUAL 1985 COMPLIANCE		
	No. of Facilities which were Substantially in Compliance with Environmental Objectives	No. of Facilities which were NOT Substantially in Compliance with Environmental Objectives	No. of Facilities where Compliance was Unknown
18	15	1	2
20	19	1	0
16	13	2	1
27	24	2	1
25	18	6	1
25	9	14	2
9	5	3	1
13	9	2	2

Abatement Measures for Non-Complying Facilities

- St. Mary's Paper - Sault Ste. Marie has no present abatement program for oxygen demand, suspended solids, bacteria, phosphorus and toxicity.
- Kimberly-Clark - Terrace Bay has no present abatement programs for toxicity.
- Control Orders or other abatement programs are in effect for all other facilities not in compliance with objectives or criteria.

SECTOR: **PETROLEUM REFINING**

S.I.C. No: 365

	1979	1980	1981	1982
No. of Facilities:	11	11	10	10
Capacity:	---------- Not Available ----------			
Production: (Million m^3 crude oil)	35.4	34.5	32.8	28.8
Estimated Capital Expenditure for Environmental Protection ($ Millions)	0.0(Air) 0.5(Water)	3.7(Air) 5.0(Water)	2.1(Air) 30.3(Water)	4.4(Air) 10.1(Water)

Notes: No. of Facilities: Figures from Statistics Canada Catalogue 45-205 (Annual)
Production: Figures from Statistics Canada Catalogue 45-004 (Monthly)

Estimated Capital Expenditures: From Applications for Certificates of Approval, Environmental Approvals expenditures in addition to refineries.

EMISSIONS	1979	1980	1981	1982
Air Emissions (Mg/day):				
Particulates	16 (9)	15 (9)	14 (8)	14 (8)
Sulphur Dioxide	206 (9)	204 (9)	221 (8)	173 (8)
Hydrocarbons				
Nitrogen Oxides				
Direct Discharges to Watercourses (Mg/day):				
Suspended Solids	3.8 (9)	3.9 (9)	3.0 (8)	1.4 (8)
Ether Solubles	1.6 (9)	1.3 (9)	0.58 (8)	1.2 (8)
Phenols	0.05(9)	0.05(9)	0.03 (8)	.009 (8)
Toxicity			N/A	N/A
Ammonia				

1983	1984	1985
10	10	10
--------- Not Available ---------		
29.3	31.3	30.3
10.1 (Air)	N/A	N/A
6.4 (Water)	N/A	N/A

and, Land Use Planning Branch, Ministry of the Environment. Figures include petrochemical

1983	1984	1985 Planned	1985 Actual
12 (7)	15 (7)	14 (7)	12 (7)
166 (6)	183 (7)	171 (7)	158 (7)
N/A	2.7 (4)	N/A	2.3 (4)
N/A	36 (4)	N/A	38 (5)
0.57 (6)	0.91 (7)	0.80 (6)	1.3 (7)
0.32 (7)	0.52 (7)	0.41 (7)	0.60 (7)
0.003 (7)	0.004 (7)	0.004 (6)	0.004 (7)
N/A	N/A	N/A	N/A
N/A	0.111 (4)	N/A	0.17 (7)

No. of Facilities in Ontario in 1985 based on Statistics Canada data : 10
Corrected No. of Facilities used for MBR evaluation (listed in Appendix D) : 8
No. of Facilities with a direct discharge to a watercourse in 1985 : 7
No. of Facilities with air emissions in 1985 : 7

Contaminant	No. of Assessable Facilities	FORECAST 1985 COMPLIANCE		
		No. of Facilities which were Expected to be Substantially in Compliance with Environmental Objectives	No. of Facilities which were NOT Expected to be Substantially in Compliance with Environmental Objectives	No. of Facilities where Compliance was Not Forecast
Particulates	7	7	0	0
Sulphur Dioxide	7	7	0	0
Hydrocarbons	N/A	N/A	N/A	N/A
Nitrogen Oxides	N/A	N/A	N/A	N/A
Suspended Solids	7	5	0	2
Ether Solubles	7	7	0	0
Phenols	7	7	0	0
Toxicity	7	7	0	0
Ammonia	N/A	N/A	N/A	N/A

No. of Assessable Facilities	ACTUAL 1985 COMPLIANCE		
	No. of Facilities which were Substantially in Compliance with Environmental Objectives	No. of Facilities which were NOT Substantially in Compliance with Environmental Objectives	No. of Facilities where Compliance was Unknown
7	7	0	0
7	7	0	0
5	5	0	0
6	5	0	1
7	6	1	0
7	7	0	0
7	4	3	0
5	5	0	0
7	7	0	0

Abatement Measures for Non-complying Facilities

- Control Orders or other abatement programs are in effect for all facilities in non-compliance with objectives or criteria.

SECTOR: **CEMENT MANUFACTURING**

S.I.C. No: 352

	1979	1980	1981	1982
No. of Facilities:	8	9	7	7
Capacity:(Million Mg/Year)	--------- Not Available ----------			
Production:(Million Mg)	3.9	3.4	3.6	2.8
Estimated Capital Expenditure for Environmental Protection ($ Millions)	------- No Figures Available -------			

Notes: No. of Facilities: Figures prior to 1983 from Statistics Canada Catalogue 44-204 (Annual)
Production: Figures prior to 1983 from Statistics Canada Catalogue 26-202 (Annual)

EMISSIONS	1979		1980		1981		1982	
Air Emissions (Mg/day):								
Particulates	29	(8)	17	(7)	17	(6)	14	(6)
Sulphur Dioxide	21	(8)	22	(7)	19	(6)	11	(6)
Direct Discharges to Watercourses (Mg/day):								

1983	1984	1985
7	7	7
6.3	6.3	N/A
2.9	3.1	N/A
N/A	N/A	N/A

1983	1984	1985 Planned	1985 Actual
9.8 (6)	6.1 (4)	9.8 (6)	N/A
12 (6)	7.9 (4)	12 (6)	N/A

No. of Facilities in Ontario in 1985 based on Statistics Canada data : 7
Corrected No. of Facilities used for MBR evaluation (listed in Appendix D) : 7
No. of Facilities with a direct discharge to a watercourse in 1985 : Not Applicable
No. of Facilities with air emissions in 1985 : 7

Contaminant	No. of Assessable Facilities	FORECAST 1985 COMPLIANCE		
		No. of Facilities which were Expected to be Substantially in Compliance with Environmental Objectives	No. of Facilities which were NOT Expected to be Substantially in Compliance with Environmental Objectives	No. of Facilities where Compliance was Not Forecast
Particulates	7	7	0	0
Sulphur Dioxide	7	7	0	0

No. of Assessable Facilities	ACTUAL 1985 COMPLIANCE		
	No. of Facilities which were Substantially in Compliance with Environmental Objectives	No. of Facilities which were NOT Substantially in Compliance with Environmental Objectives	No. of Facilities where Compliance was Unknown
7	2	0	5
7	2	0	5

Abatement Measures for Non-Complying Facilities

- Control Orders or other abatement programs are in effect for all facilities in non-compliance with criteria.

SECTOR: **METAL MINES**

S.I.C. No: 051, 052, 057, 058, 159

	1979	1980	1981	1982
No. of Facilities:	38	40	35	27
Capacity:	-------- Not Available ----------			
Production:				
Precious Metals - Gold, Silver, Platinum (Million kg)	0.45	0.48	0.36	0.36
Cu, Ni, Pb, Zn (" ")	564.57	661.9	604.3	498.8
Iron Ore (Million Kg)	8.2	6.5	5.3	3.8
Uranium (Million Kg)	4.42	4.3	4.7	5.0
Estimated Capital Expenditure for Environmental Protection ($ Millions)	See Notes concerning Smelting and Refining Sector.			

Notes: No. of Facilities & Production: Figures from Statistics Canada Catalogue 26-202 (Annual)

EMISSIONS	1979	1980	1981	1982
Air Emissions (Mg/day):				
Particulates			N/A	4.0 (2)
Sulphur Dioxide			N/A	N/A
Direct Discharges to Watercourses (Mg/day)				
Cyanide	0.04 (6)	0.09 (7)	0.12 (7)	0.13 (7)
Heavy Metals	1.6 (30)	1.6 (31)	0.83 (25)	0.85 (25)
Suspended Solids	14 (30)	7.2 (32)	4.3 (24)	4.5 (25)
Ammonia			1.4 (2)	2.9 (3)
Arsenic				

1983	1984	1985
27	24	N/A
----- Not Available -----		
0.35	0.50	0.48
489.7	732.0	691.04
3.7	3.8	4.5
4.8	4.3	4.5

1983	1984	1985 Planned	1985 Actual
0.007 (1)	N/A	0.007 (1)	N/A
18.0 (1)	N/A	18.0 (1)	N/A
0.24 (6)	0.28 (6)	0.12 (5)	.22 (6)
0.50 (15)	0.38 (21)	0.36 (13)	0.28 (18)
3.6 (17)	4.8 (23)	3.7 (15)	3.0 (20)
N/A	1.9 (4)	N/A	2.7 (13)
N/A	0.04 (3)	N/A	0.04 (9)

No. of Facilities in Ontario in 1985 based on Statistics Canada data : Not Available
Corrected No. of Facilities used for MBR evaluation (listed in Appendix D) : 23
No. of Facilities with a direct discharge to a watercourse in 1985 : 21*
No. of Facilities with air emissions in 1985 : 1*

Contaminant	No. of Assessable Facilities	FORECAST 1985 COMPLIANCE		
		No. of Facilities which were Expected to be Substantially in Compliance with Environmental Objectives	No. of Facilities which were NOT Expected to be Substantially in Compliance with Environmental Objectives	No. of Facilities where Compliance was Not Forecast
Particulates	1	1	0	0
Sulphur Dioxide	1	1	0	0
Cyanide	5	3	2	0
Heavy Metals	22	17	3	2
Suspended Solids	5	5	0	0
Ammonia	N/A	N/A	N/A	N/A
Arsenic	N/A	N/A	N/A	N/A

* Dickenson and Campbell Red Lake Mines (Balmertown) are assessed jointly.

No. of Assessable Facilities	ACTUAL 1985 COMPLIANCE		
	No. of Facilities which were Substantially in Compliance with Environmental Objectives	No. of Facilities which were NOT Substantially in Compliance with Environmental Objectives	No. of Facilities where Compliance was Unknown
1	1	0	0
1	1	0	0
5	1	0	4
19	11	2	6
17	8	3	6
12	7	0	5
9	3	1	5

Abatement Measures for Non-Complying Facilities

- Control Orders or other abatement programs are in effect for all facilities in non-compliance with objectives.

SECTOR: **THERMAL GENERATING STATIONS**

	1979	1980	1981	1982
No. of Facilities:	7	7	7	7
Capacity: MW (Dec.Dep.Peak)*	11,488	10,167	10,421	1,013
Production: GWh	33,043	32,802	33,833	36,483
Estimated Operating Expenditure for Environmental Protection** ($ Millions)	2.6	4.5	4.8	N/A

Notes: No. of Facilities and Production: Figures from Ontario Hydro report entitled Estimates of Atmospheric

Capacity: Figures prior to 1982 from Ontario Hydro report entitled Power Resource

EMISSIONS	1979	1980	1981	1982	
Air Emissions (Mg/day):					
Particulates	23	23	23	22	(7)
Sulphur Dioxide	1197	1085	1145	1233	(7)
Nitrogen Oxide	169	180	195	222	(7)
Direct Discharges to Watercourses (Mg/day):	---------- Not Available ----------				

* December Dependable Peak.

** Capital expenditure figures are not available. Instead, estimates have been provided for increased operating expenditures associated with pollution abatement efforts.

1983	1984	1985
6	5	N/A
8,277	N/A	N/A
37,264	39,421	N/A
2.7	N/A	N/A

Emissions from Ontario Hydro (Annual).

Report (1981). Mothballed units are not included.

1983		1984		1985 Planned		1985 Actual	
23	(6)	23	(5)	17	(5)	19	(5)
1199	(6)	1217	(5)	1019	(5)	922	(5)
324	(6)	313	(5)	223	(5)	259	(5)

----- Not Available -----

No. of Facilities in Ontario in 1985 based on Statistics Canada data : N/A
Corrected No. of Facilities used for MBR evaluation (listed in Appendix D) : 5
No. of Facilities with a direct discharge to a watercourse in 1985 : N/A
No. of Facilities with air emissions in 1985 : 5

Contaminant	No. of Assessable Facilities	FORECAST 1985 COMPLIANCE		
		No. of Facilities which were Expected to be Substantially in Compliance with Environmental Objectives	No. of Facilities which were NOT Expected to be Substantially in Compliance with Environmental Objectives	No. of Facilities where Compliance was Not Forecast
Particulates	5	5	0	0
Sulphur Dioxide	5	5	0	0
Nitrogen Oxides	5	5	0	0

No. of Assessable Facilities	ACTUAL 1985 COMPLIANCE		
	No. of Facilities which were Substantially in Compliance with Environmental Objectives	No. of Facilities which were NOT Substantially in Compliance with Environmental Objectives	No. of Facilities where Compliance was Unknown
5	5	0	0
5	5	0	0
5	5	0	0

SECTOR: **NON-FERROUS SMELTING AND REFINING**

S.I.C. No: 295

	1979	1980	1981	1982
No. of Facilities:	11	11	12	12
Capacity:	---------- Not Available ----------			
Production:				
Estimated Capital Expenditure for Environmental Protection ($ Millions)	4.6(Air) 1.2(Water)	5.7(Air) 3.7(Water)	10.6(Air) 57.5(Water	3.1(Air) 28.7(Water)

Notes: No. of Facilities: Figures prior to 1983 from Statistics Canada Catalogue 41-214 (Annual)

Estimated Capital Expenditures: From Applications for Certificates of Approval, Environmental Approvals Estimated Capital Expenditures include Mining expenditures and

EMISSIONS	1979	1980	1981	1982
Air Emissions (Mg/day):				
Particulates	37 (4)	36 (6)	36 (8)	34 (7)
Sulphur Dioxide	1366 (5)	2543 (8)	2503 (8)	2235 (8)
Nitrogen Oxides				
Fluorides			0 (1)	N/A
Nitric Acid				
Uranium			0 (1)	N/A
Ammonia				
Direct Discharges to Watercourses (Mg/day):				
Heavy Metals			0.09 (3)	0.03 (3)
Suspended Solids			0.19 (2)	0.23 (2)
Ammonia			1.4 (1)	1.1 (1)
Radium 226			N/A	N/A
Arsenic				
Fluorides				
Nitrates				
Uranium				

1983	1984	1985
12	12	12
N/A	N/A	N/A
---	---	---
761.4 (Air)*	N/A	N/A
6.5 (Water)	N/A	N/A

and Land Use Planning Branch, Ministry of the Environment.
therefore do not coincide precisely with S.I.C. 295.

1983	1984	1985 Planned	1985 Actual
38 (7)	83 (6)	38 (7)	37 (5)
2127 (6)	2123 (6)	2435 (6)	2143 (6)
N/A	N/A	N/A	N/A
N/A	N/A	N/A	0.004 (1)
N/A	N/A	N/A	N/A
N/A	0.08 (1)	N/A	0.06 (1)
N/A	N/A	N/A	N/A
0.05 (1)	0.05 (3)	0.05 (2)	0.03 (3)
0.50 (1)	0.61 (2)	0.50 (1)	0.33 (2)
N/A	0.11 (1)	N/A	N/A
N/A	N/A	N/A	N/A
N/A	0.002 (1)	N/A	0.002 (1)
N/A	0.29 (1)	N/A	N/A
N/A	1.6 (1)	N/A	N/A
N/A	0.03 (1)	N/A	N/A

* Total includes $755 million spent on construction at Eldorado Nuclear, Blind River.

No. of Facilities in Ontario in 1985 based on Statistics Canada data : 12
Corrected No. of Facilities used for MBR evaluation (listed in Appendix D) : 8
No. of Facilities with a direct discharge to a watercourse in 1985 : 4
No. of Facilities with air emissions in 1985 : 6

Contaminant	No. of Assessable Facilities	FORECAST 1985 COMPLIANCE		
		No. of Facilities which were Expected to be Substantially in Compliance with Environmental Objectives	No. of Facilities which were NOT Expected to be Substantially in Compliance with Environmental Objectives	No. of Facilities where Compliance was Not Forecast
Particulates	9	9	0	0
Sulphur Dioxide	9	9	0	0
Nitrogen Oxides	N/A	N/A	N/A	N/A
Fluorides	1	1	0	0
Nitric Acid	N/A	N/A	N/A	N/A
Uranium	N/A	N/A	N/A	N/A
Ammonia	N/A	N/A	N/A	N/A
Heavy Metals	4	4	0	0
Suspended Solids	4	4	0	0
Ammonia	2	2	0	0
Radium 226	1	1	0	0
Arsenic	N/A	N/A	N/A	N/A
Fluorides	N/A	N/A	N/A	N/A
Nitrates	N/A	N/A	N/A	N/A
Uranium	N/A	N/A	N/A	N/A

No. of Assessable Facilities	ACTUAL 1985 COMPLIANCE		
	No. of Facilities which were Substantially in Compliance with Environmental Objectives	No. of Facilities which were NOT Substantially in Compliance with Environmental Objectives	No. of Facilities where Compliance was Unknown
5	4	1	0
6	6	0	0
2	1	0	1
1	1	0	0
1	1	0	0
1	1	0	0
1	1	0	0
3	3	0	0
2	2	0	0
1	1	0	0
N/A	N/A	N/A	N/A
1	1	0	0
1	1	0	0
1	1	0	0
1	1	0	0

SECTOR: **FISH PRODUCTS INDUSTRY**

S.I.C. No: 102

	1979	1980	1981	1982
No. of Facilities:	15	15	15	7
Capacity:	---------- Not Available ----------			
Production:				
Value of Shipments ($ Million)	27	28	28	N/A
Estimated Capital Expenditure for Environmental Protection ($Millions)	Expenditures Are Not Significant			

Notes: No. of Facilities: Figures prior to 1983 from Statistics Canada Catalogue 32-216.

EMISSIONS	1979	1980	1981	1982
Air Emissions (Mg/day):	No Significant Air Emissions			
Direct Discharges to Watercourses (Mg/day):				
Oxygen Demand	1.0 (2)	1.0 (3)	1.0 (3)	0.17 (4)
Suspended Solids	1.0 (2)	1.0 (3)	1.0 (3)	0.15 (4)

1983	1984	1985
7	7	N/A
----- Not Available -----		
N/A	N/A	N/A

1983	1984	1985 Planned	1985 Actual
0.28 (3)	0.30 (3)	0.18 (3)	0.04 (1)
0.37 (3)	0.22 (3)	0.12 (3)	0.07 (1)

No. of Facilities in Ontario in 1985 based on Statistics Canada data : Not Available
Corrected No. of Facilities used for MBR evaluation (listed in Appendix D) : 3
No. of Facilities with a direct discharge to a watercourse in 1985 : 1
No. of Facilities with air emissions in 1985 : N/A

Contaminant	No. of Assessable Facilities	FORECAST 1985 COMPLIANCE		
		No. of Facilities which were Expected to be Substantially in Compliance with Environmental Objectives	No. of Facilities which were NOT Expected to be Substantially in Compliance with Environmental Objectives	No. of Facilities where Compliance was Not Forecast
Oxygen Demand	3	3	0	0
Suspended Solids	3	3	0	0

No. of Assessable Facilities	ACTUAL 1985 COMPLIANCE		
	No. of Facilities which were Substantially in Compliance with Environmental Objectives	No. of Facilities which were NOT Substantially in Compliance with Environmental Objectives	No. of Facilities where Compliance was Unknown
1	1	0	0
1	0	1	0

SECTOR: **PLASTICS AND SYNTHETIC RESINS**

S.I.C. No: 373

	1979	1980	1981	1982
No. of Facilities:	34	33	33	33
Capacity:	---------- Data Incomplete ----------			
Production: Value of Shipments ($ Millions)		617.7	N/A	N/A
Estimated Capital Expenditure for Environmental Protection ($Millions)	Expenditures included in expenditures for "Petroleum Refining and Petrochemicals" and for "Industrial Chemicals".			

Notes: No. of Facilities and Production: Figures prior to 1981 from Statistics Canada Catalogue 46-211 (Annual)

EMISSIONS	1979	1980	1981	1982
Air Emissions (Mg/day):				
Particulates				0.28 (3)
Sulphur Dioxide				1.4 (4)
Nitrogen Oxides				1.0 (4)
Hydrocarbons				0.11 (2)
Formaldehyde				
Odours				
Carbon Monoxide				
Direct Discharges to Watercourses (Mg/day):				
Suspended Solids				0.76 (3)
Phenols				0.0001 (2)
Phosphorus				0.0007 (2)
Oxygen Demand				0.001 (2)
Vinyl Chloride				

1983	1984	1985
33	33	N/A
----- Data Incomplete -----		
N/A	N/A	N/A

"Manufacturing of Plastics and Synthetic Resins".

1983	1984	1985 Planned	1985 Actual
0.17 (2)	0.07 (1)	0.22 (2)	0.08 (1)
1.2 (3)	0.11 (2)	1.4 (3)	0.15 (1)
7.9 (4)	0.6 (1)	8.5 (4)	0.62 (1)
0.10 (2)	0.57 (1)	0.11 (2)	0.10 (1)
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
0.003 (1)	0.02 (2)	0.03 (1)	0.25 (3)
N/A	0.009 (2)	N/A	0.0008 (3)
N/A	0.001 (2)	N/A	0.0004 (2)
0.01 (1)	0.78 (3)	0.03 (1)	0.71 (3)
N/A	0.001 (1)	N/A	0.0002 (1)

No. of Facilities in Ontario in 1985 based on Statistics Canada data : Not Available
Corrected No. of Facilities used for MBR evaluation (listed in Appendix D) : 8
No. of Facilities with a direct discharge to a watercourse in 1985 : 5
No. of Facilities with air emissions in 1985 : 7

Contaminant	No. of Assessable Facilities	FORECAST 1985 COMPLIANCE		
		No. of Facilities which were Expected to be Substantially in Compliance with Environmental Objectives	No. of Facilities which were NOT Expected to be Substantially in Compliance with Environmental Objectives	No. of Facilities where Compliance was Not Forecast
Particulates	2	2	0	0
Sulphur Dioxide	4	4	0	0
Nitrogen Oxides	4	4	0	0
Hydrocarbons	6	5	1	0
Formaldehyde	N/A	N/A	N/A	N/A
Odours	N/A	N/A	N/A	N/A
Carbon Monoxide	N/A	N/A	N/A	N/A
Suspended Solids	2	2	0	0
Phenols	3	2	1	0
Phosphorus	2	2	0	0
Oxygen Demand	3	3	0	0
Vinyl Chloride	N/A	N/A	N/A	N/A

No. of Assessable Facilities	ACTUAL 1985 COMPLIANCE		
	No. of Facilities which were Substantially in Compliance with Environmental Objectives	No. of Facilities which were NOT Substantially in Compliance with Environmental Objectives	No. of Facilities where Compliance was Unknown
2	1	0	1
2	1	0	1
2	1	0	1
2	1	0	1
2	0	1	1
2	0	2	0
1	0	0	1
3	3	0	0
3	2	1	0
2	2	0	0
3	1	2	0
1	1	0	0

Abatement Measures for Non-Complying Facilities

- Control Orders or other abatement programs are in effect for all facilities not in compliance with objectives or criteria.

SECTOR: **INDUSTRIAL CHEMICALS**

S.I.C. No: 378

	1979	1980	1981	1982
No. of Facilities:	63	62	62	62
Capacity:	---------- Data Incomplete ----------			
Production: Value of Shipments ($ Millions)		2,619.4	N/A	N/A
Estimated Capital Expenditure for Environmental Protection ($ Millions)		5.3(Air) 3.4(Water)	6.0(Air) 7.4(Water)	4.8(Air) 0.3(Water)

Notes: No. of Facilities and Production: Figures prior to 1981 from Statistics Canada Catalogue 46-219 (Annual)

Estimated Capital Expenditures: From Applications for Certificates of Approval, Environmental Approvals Estimated Capital Expenditures include all Chemical expenditures and

EMISSIONS	1979	1980	1981	1982	
Air Emissions (Mg/day):					
Particulates				2.5	(7)
Sulphur Dioxide				33	(7)
Nitrogen Oxides				31	(7)
Hydrocarbons				.2	(5)
Vinyl Chloride					
Mercury					
Phtalic Anhydride					
Lead					
Direct Discharges to Watercourses (Mg/day):					
Oxygen Demand				6.7	(5)
Suspended Solids				12	(10)
Heavy Metals				0.51	(2)
Phenols				0.01	(3)
Total Organic Carbon				9.3	(3)
Ammonia				0.35	(1)
Nitrogen					
Chlorides					
Phosphorus					
Sulphuric Acid					
Solvent Extractables					
Dissolved Solids					
Fluorides					
Nitrates					

1983	1984	1985
62	62	62
----- Data Incomplete -----		
N/A	N/A	N/A
3.4 (Air)	N/A	N/A
0.7 (Water)	N/A	N/A

"Manufacturing of Industrial Chemicals".

and Land Use Planning Branch, Ministry of the Environment.
therefore do not coincide precisely with S.I.C. 378.

1983		1984		1985 Planned		1985 Actual	
2.4	(5)	2.5	(9)	3.1	(5)	1.0	(7)
16	(5)	10	(6)	18	(5)	8.5	(5)
23	(6)	22	(8)	27	(6)	9.2	(6)
2.2	(5)	2.7	(8)	2.7	(5)	1.6	(6)
N/A		0.1	(1)	N/A		N/A	
N/A		0.001	(1)	N/A		0.0001	(1)
N/A		0.02	(1)	N/A		0.02	(1)
N/A		0.03	(1)	N/A		N/A	
3.0	(2)	9.6	(6)	3.1	(2)	9.0	(6)
12	(9)	12	(13)	13	(9)	8.3	(10)
0.09	(4)	0.29	(6)	0.02	(3)	0.29	(6)
0.01	(3)	0.005	(4)	0.01	(3)	0.01	(4)
6.2	(2)	3.8	(5)	4.1	(3)	2.4	(5)
1.8	(2)	0.7	(4)	1.9	(2)	1.3	(6)
19	(2)	9.8	(3)	3.7	(2)	3.5	(2)
320	(1)	822	(1)	330	(1)	730	(2)
N/A		0.05	(3)	N/A		0.05	(4)
N/A		16	(2)	N/A		13	(2)
N/A		0.07	(2)	N/A		0.07	(2)
N/A		1.8	(1)	N/A		4.9	(3)
N/A		0.04	(1)	N/A		0.11	(2)
						1.4	(2)

No. of Facilities in Ontario in 1985 based on Statistics Canada data : 62
Corrected No. of Facilities used for MBR evaluation (listed in Appendix D) : 26
No. of Facilities with a direct discharge to a watercourse in 1985 : 15
No. of Facilities with air emissions in 1985 : 21

Contaminant	No. of Assessable Facilities	FORECAST 1985 COMPLIANCE		
		No. of Facilities which were Expected to be Substantially in Compliance with Environmental Objectives	No. of Facilities which were NOT Expected to be Substantially in Compliance with Environmental Objectives	No. of Facilities where Compliance was Not Forecast
Particulates	10	9	0	1
Sulphur Dioxide	7	7	0	0
Nitrogen Oxides	7	7	0	0
Hydrocarbons	17	13	0	4
Mercury	N/A	N/A	N/A	N/A
Phtalic Anhydride	N/A	N/A	N/A	N/A
Lead	N/A	N/A	N/A	N/A
Amine	N/A	N/A	N/A	N/A
Napthenic Acid	N/A	N/A	N/A	N/A
Oxygen Demand	5	3	2	0
Suspended Solids	10	9	0	1
Heavy Metals	3	2	1	0
Phenols	3	2	1	0
Total Organic Carbon	3	3	0	0
Ammonia	2	1	1	0
Nitrogen	3	2	1	0
Chlorides	2	2	0	0
Solvent Extractables	N/A	N/A	N/A	N/A
Dissolved Solids	N/A	N/A	N/A	N/A
Fluorides	N/A	N/A	N/A	N/A
Phosphorus	N/A	N/A	N/A	N/A
Sulphuric Acid	N/A	N/A	N/A	N/A
Nitrates	N/A	N/A	N/A	N/A

No. of Assessable Facilities	ACTUAL 1985 COMPLIANCE		
	No. of Facilities which were Substantially in Compliance with Environmental Objectives	No. of Facilities which were NOT Substantially in Compliance with Environmental Objectives	No. of Facilities where Compliance was Unknown
12	12	0	0
13	13	0	0
13	13	0	0
12	12	0	0
1	1	0	0
1	1	0	0
1	1	0	0
1	1	0	0
1	1	0	0
6	4	2	0
10	7	2	1
10	9	1	0
4	4	0	0
5	5	0	0
6	6	0	0
2	1	1	0
2	2	0	0
2	2	0	0
1	1	0	0
2	1	0	1
4	4	0	0
3	2	1	0
1	0	1	0

Abatement Measures for Non-Complying Facilities

- Reichhold Chemicals - Thunder Bay has no present abatement program for suspended solids.
- Control Orders or other abatement programs are in effect for all other facilities not in compliance with objectives or criteria.

SECTOR: **ABRASIVES**

S.I.C. No: 291

	1979	1980	1981	1982
No. of Facilities:		20	20	20
Capacity:	---------- data incomplete ----------			
Production:				
Value of Shipments ($ Million)		158.6	N/A	N/A
Estimated Capital Expenditure for Environmental Protection ($ Millions)	---------- Not Available ----------			

Notes: No. of Facilities and Production: Figures prior to 1981 from Statistics Canada Catalogue 44-202 (Annual)

EMISSIONS	1979	1980	1981	1982	
Air Emissions (Mg/day):					
Particulates				1.0	(1)
Sulphur Dioxide				12	(2)
Hydrogen Sulphide				1.1	(1)
Noise					
Dust					
Urea Formaldehyde					
Furfural, Phenols, Formaldehyde					
Odours					
Direct Discharges to Watercourses (Mg/Day):					
Oxygen Demand				0.06	(2)
Suspended Solids				3.3	(2)
Phosphorus				0.02	(2)
Phenols					

1983	1984	1985
20	20	20
-------- data incomplete --------		
N/A	N/A	N/A
---------- Not Available ----------		

"Abrasives Manufacturing".

1983	1984	1985 Planned	1985 Actual
2.3 (3)	1.3 (2)	2.3 (3)	1.3 (2)
2.0 (2)	1.0 (1)	2.0 (2)	N/A
1.1 (1)	N/A	1.1 (1)	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	0.002 (1)	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	0.05 (2)
0.54 (2)	0.30 (2)	0.78 (2)	0.74 (3)
N/A	0.001 (1)	N/A	0.0001 (1)
N/A	N/A	N/A	N/A

No. of Facilities in Ontario in 1985 based on Statistics Canada data : 20
Corrected No. of Facilities used for MBR evaluation (listed in Appendix D) : 7
No. of Facilities with a direct discharge to a watercourse in 1985 : 2
No. of Facilities with air emissions in 1985 : 5

Contaminant	No. of Assessable Facilities	FORECAST 1985 COMPLIANCE		
		No. of Facilities which were Expected to be Substantially in Compliance with Environmental Objectives	No. of Facilities which were NOT Expected to be Substantially in Compliance with Environmental Objectives	No. of Facilities where Compliance was Not Forecast
Particulates	7	5	1	1
Sulphur Dioxide	4	4	0	0
Dust	N/A	N/A	N/A	N/A
Odours	N/A	N/A	N/A	N/A
Noise	N/A	N/A	N/A	N/A
Hydrogen Sulphide	3	1	1	1
Urea Formaldehyde	N/A	N/A	N/A	N/A
Furfural, Phenols Formaldehyde	N/A	N/A	N/A	N/A
Oxygen Demand	2	2	0	0
Suspended Solids	3	3	0	0
Phosphorus	1	1	0	0
Phenols	N/A	N/A	N/A	N/A

No. of Assessable Facilities	ACTUAL 1985 COMPLIANCE		
	No. of Facilities which were Substantially in Compliance with Environmental Objectives	No. of Facilities which were NOT Substantially in Compliance with Environmental Objectives	No. of Facilities where Compliance was Unknown
4	1	3	0
4	3	1	0
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
4	2	2	0
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
2	2	0	0
2	2	0	0
2	2	0	0
N/A	N/A	N/A	N/A

SECTOR: **METAL STAMPING, PRESSING, AND COATING INDUSTRIES**

S.I.C. No: 3042

	1979	1980	1981	1982
No. of Facilities:		116	116	124
Capacity:		--------- Not Available ---------		
Production:				
Value of Shipments ($ Millions)		1,740.4	1,719.9	1,540.8
Estimated Capital Expenditure for Environmental Protection ($ Millions)				

Notes: No. of Facilities: Figures from Statistics Canada Catalogue 41-227 (Annual).

EMISSIONS	1979	1980	1981	1982
Air Emissions (Mg/day):				
Noise	---------- No Data Available ----------			
Vibration	---------- No Data Available ----------			

1983	1984	1985
124	124	116

--------- Not Available ----------

1983	1984	1985 Planned	1985 Actual

---------- No Data Available ----------

---------- No Data Available ----------

No. of Facilities in Ontario in 1985 based on Statistics Canada data : 116
Corrected No. of Facilities used for MBR evaluation (listed in Appendix D) : 42
No. of Facilities with a direct discharge to a watercourse in 1985 : N/A
No. of Facilities with air emissions in 1985 : 34

Contaminant	No. of Assessable Facilities	FORECAST 1985 COMPLIANCE		
		No. of Facilities which were Expected to be Substantially in Compliance with Environmental Objectives	No. of Facilities which were NOT Expected to be Substantially in Compliance with Environmental Objectives	No. of Facilities where Compliance was Not Forecast
Noise	53	40	1	12
Vibration	53	52	0	1

No. of Assessable Facilities	ACTUAL 1985 COMPLIANCE		
	No. of Facilities which were Substantially in Compliance with Environmental Objectives	No. of Facilities which were NOT Substantially in Compliance with Environmental Objectives	No. of Facilities where Compliance was Unknown
34	29	0	5
34	27	2	7

Abatement Measures for Non-Complying Facilities

- Control Orders or other abatement programs are in effect for all facilities in non-compliance with objectives.

SECTOR: **LIME MANUFACTURING**

S.I.C. No: 358

	1979	1980	1981	1982
No. of Facilities:	N/A	6	6	6
Capacity:	---------- Not Available ----------			
Production: Value of Shipments ($ Millions)		67.1	76.2	69.7
Estimated Capital Expenditure for Environmental Protection ($ Millions)	---------- Not Available ----------			

Notes: No. of Facilities and Production: Figures prior to 1983 from Statistics Canada Catalogue 44-220.

EMISSIONS	1979	1980	1981	1982
Air Emissions (Mg/day):				
Particulates				
Direct Discharges to Watercourses (Mg/day):				

1983	1984	1985
6	6	6
76.0 (est.)	N/A	N/A
---------- Not Available ----------		

1983	1984	1985 Planned	1985 Actual
5.4 (2)	19.7 (4)	2.7 (2)	17.4 (3)
No Significant Discharges			

No. of Facilities in Ontario in 1985 based on Statistics Canada data : 6
Corrected No. of Facilities used for MBR evaluation (listed in Appendix D) : 6
No. of Facilities with a direct discharge to a watercourse in 1985 : N/A
No. of Facilities with air emissions in 1985 : 6

Contaminant	No. of Assessable Facilities	FORECAST 1985 COMPLIANCE		
		No. of Facilities which were Expected to be Substantially in Compliance with Environmental Objectives	No. of Facilities which were NOT Expected to be Substantially in Compliance with Environmental Objectives	No. of Facilities where Compliance was Not Forecast
Particulates	6	3	2	1

No. of Assessable Facilities	ACTUAL 1985 COMPLIANCE		
	No. of Facilities which were Substantially in Compliance with Environmental Objectives	No. of Facilities which were NOT Substantially in Compliance with Environmental Objectives	No. of Facilities where Compliance was Unknown
6	0	1	5

Abatement Measures for Non-Complying Facilities

- Control Orders or other abatement programs are in effect for all facilities in non-compliance with criteria.

SECTOR: AUTOMOBILE MANUFACTURING

S.I.C. No:

	1979	1980	1981	1982
No. of Facilities:				
Capacity:				
Production:	---------- Not Available ----------			
Estimated Capital Expenditure for Environmental Protection ($ Millions)				

EMISSIONS	1979	1980	1981	1982
Air Emissions (Mg/day):				
Particulates				
Sulphur Dioxide				
Total Reduced Sulphur				
Nitrogen Oxides				
Odours				
Direct Discharges to Watercourses (Mg/day):				
Oxygen Demand				
Suspended Solids				
Solvent Extractables				
Phenols				
Phosphorus				
Carbon Oxygen Demand				

* Numbers in brackets represent the number of facilities contributing to total emissions/discharges.

1983	1984	1985
		N/A
	---------- Not Available ----------	
		N/A
		N/A

1983	1984	1985 Planned	1985 Actual
N/A	1.1 (1)	N/A	N/A
N/A	1.2 (1)	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	.94 (3)	N/A	0.58 (3)
N/A	1.8 (3)	N/A	2.1 (3)
N/A	.08 (2)	N/A	0.06 (3)
N/A	.012 (3)	N/A	0.02 (3)
N/A	.005 (2)	N/A	0.01 (3)
			0.237 (1)

No. of Facilities in Ontario in 1985 based on Statistics Canada data : N/A
Corrected No. of Facilities used for MBR evaluation (listed in Appendix D) : 5
No. of Facilities with a direct discharge to a watercourse in 1985 : 3
No. of Facilities with air emissions in 1985 : 3

Contaminant	No. of Assessable Facilities	FORECAST 1985 COMPLIANCE		
		No. of Facilities which were Expected to be Substantially in Compliance with Environmental Objectives	No. of Facilities which were NOT Expected to be Substantially in Compliance with Environmental Objectives	No. of Facilities where Compliance was Not Forecast
Particulates	N/A	N/A	N/A	N/A
Sulphur Dioxide	N/A	N/A	N/A	N/A
Total Reduced Sulphur	N/A	N/A	N/A	N/A
Nitrogen Oxides	N/A	N/A	N/A	N/A
Odours	N/A	N/A	N/A	N/A
Oxygen Demand	N/A	N/A	N/A	N/A
Suspended Solids	N/A	N/A	N/A	N/A
Solvent Extractables	N/A	N/A	N/A	N/A
Phenols	N/A	N/A	N/A	N/A
Phosphorus	N/A	N/A	N/A	N/A
Carbon Oxygen Demand	N/A	N/A	N/A	N/A

No. of Assessable Facilities	ACTUAL 1985 COMPLIANCE		
	No. of Facilities which were Substantially in Compliance with Environmental Objectives	No. of Facilities which were NOT Substantially in Compliance with Environmental Objectives	No. of Facilities where Compliance was Unknown
1	1	0	0
1	1	0	0
1	1	0	0
1	1	0	0
2	1	1	0
3	2	1	0
3	2	1	0
3	3	0	0
3	2	1	0
3	2	1	0
1	1	0	0

Abatement Measures for Non-complying Facilities

- Control Orders or other abatement programs are in effect for all facilities in non-compliance with objectives or criteria.

SECTOR: **POULTRY PROCESSING**

S.I.C. No:

	1979	1980	1981	1982
No. of Facilities:		34	35	36
Capacity:	---------- Not Available ----------			
Production:				
Estimated Capital Expenditure for Environmental Protection ($ Millions)				

Notes:

EMISSIONS	1979	1980	1981	1982
Air Emissions (Mg/day):				
Odours				
Ammonia				
Direct Discharges to Watercourses (Mg/day):				
Oxygen Demand				
Suspended Solids				
Total Kieldahl Nitrogen				
Phosphorus				
Ammonia				

* Numbers in brackets represent the number of facilities contributing to total emissions/discharges.

1983	1984	1985
30	32	N/A
---------- Not Available ----------		

1983	1984	1985 Planned	1985 Actual
N/A	N/A	N/A	N/A
			N/A
N/A	0.29 (5)	N/A	0.37 (5)
N/A	0.27 (5)	N/A	0.36 (5)
N/A	0.013 (5)	N/A	0.04 (3)
N/A	0.032 (1)	N/A	0.02 (5)
N/A	0.02 (1)	N/A	0.03 (3)

No. of Facilities in Ontario in 1985 based on Statistics Canada data : N/A
Corrected No. of Facilities used for MBR evaluation (listed in Appendix D) : 7
No. of Facilities with a direct discharge to a watercourse in 1985 : 5
No. of Facilities with air emissions in 1985 : 2

Contaminant	No. of Assessable Facilities	FORECAST 1985 COMPLIANCE		
		No. of Facilities which were Expected to be Substantially in Compliance with Environmental Objectives	No. of Facilities which were NOT Expected to be Substantially in Compliance with Environmental Objectives	No. of Facilities where Compliance was Not Forecast
Odours	N/A	N/A	N/A	N/A
Ammonia				
Oxygen Demand	N/A	N/A	N/A	N/A
Suspended Solids	N/A	N/A	N/A	N/A
Total Kieldahl Nitrogen	N/A	N/A	N/A	N/A
Phosphorus	N/A	N/A	N/A	N/A
Ammonia	N/A	N/A	N/A	N/A

No. of Assessable Facilities	ACTUAL 1985 COMPLIANCE		
	No. of Facilities which were Substantially in Compliance with Environmental Objectives	No. of Facilities which were NOT Substantially in Compliance with Environmental Objectives	No. of Facilities where Compliance was Unknown
2	0	2	0
1	1	0	0
5	2	3	0
5	1	4	0
3	0	2	1
5	1	4	0
2	1	1	0

Abatement Measures for Non-complying Facilities

- Control Orders or other abatement programs are in effect for all facilities in non-compliance with objectives or criteria.

SECTOR: **MEAT PROCESSING**

S.I.C. No:

	1979	1980	1981	1982
No. of Facilities:		189	181	174
Capacity:				
Production:		---------- Not Available ----------		
Estimated Capital Expenditure for Environmental Protection ($ Millions)				
Notes:				

EMISSIONS	1979	1980	1981	1982
Air Emissions (Mg/day):				
Odours				
Direct Discharges to Watercourses (Mg/day):				
Oxygen Demand				
Suspended Solids				
Phosphorus				

* Numbers in brackets represent the number of facilities contributing to total emissions/discharges.

1983	1984	1985
179	195	N/A
---------- Not Available ----------		

1983	1984	1985 Planned	1985 Actual
N/A	(30)	N/A	N/A
N/A	0.013 (1)	N/A	0.02 (1)
N/A	0.009 (1)	N/A	0.005 (1)
N/A	0.004 (1)	N/A	0.002 (1)

No. of Facilities in Ontario in 1985 based on Statistics Canada data : 23
Corrected No. of Facilities used for MBR evaluation (listed in Appendix D) : 5
No. of Facilities with a direct discharge to a watercourse in 1985 : 2
No. of Facilities with air emissions in 1985 : 1

Contaminant	No. of Assessable Facilities	FORECAST 1985 COMPLIANCE		
		No. of Facilities which were Expected to be Substantially in Compliance with Environmental Objectives	No. of Facilities which were NOT Expected to be Substantially in Compliance with Environmental Objectives	No. of Facilities where Compliance was Not Forecast
Odours	N/A	N/A	N/A	N/A
Oxygen Demand	N/A	N/A	N/A	N/A
Suspended Solids	N/A	N/A	N/A	N/A
Phosphorus	N/A	N/A	N/A	N/A

No. of Assessable Facilities	ACTUAL 1985 COMPLIANCE		
	No. of Facilities which were Substantially in Compliance with Environmental Objectives	No. of Facilities which were NOT Substantially in Compliance with Environmental Objectives	No. of Facilities where Compliance was Unknown
1	0	1	0
2	0	2	0
2	1	1	0
2	1	0	1

Abatement Measures for Non-complying Facilities

- Control Orders or other abatement programs are in effect for all facilities in non-compliance with objectives or criteria.

SECTOR: **MISCELLANEOUS MANUFACTURING**

S.I.C. No:

	1979	1980	1981	1982
No. of Facilities:				
Capacity:	---------- Not Available ----------			
Production:				
Estimated Capital Expenditure for Environmental Protection ($ Millions)				
Notes:				
EMISSIONS	**1979**	**1980**	**1981**	**1982**
Air Emissions (Mg/day):				
Particulates				
Hydrocarbons				
Sulphur Dioxide				
Nitrogen Oxides				
Asbestos				
Direct Discharges to Watercourses (Mg/day):				
Oxygen Demand				
Suspended Solids				
Phosphorus				
Phenols				
Ammonia				
Fluorides				
Chromium				

* Numbers in brackets represent the number of facilities contributing to total emissions/discharges.

1983	1984	1985
23	23	23
---------- Not Available ----------		
8.6	9.8 (est.)	N/A
12.7	15.2 (est.)	N/A
.02 (Air)	N/A	N/A
20.2 (Water)	N/A	N/A

1983	1984	1985 Planned	1985 Actual
N/A	1.35 (3)	N/A	6.6 (1)
N/A	.25 (3)	N/A	N/A
N/A	.14 (2)	N/A	N/A
N/A	.27 (3)	N/A	N/A
N/A	.08 (2)	N/A	0.08 (2)
N/A	.026 (2)	N/A	1.0 (2)
N/A	.09 (3)	N/A	2.5 (3)
N/A	.04 (2)	N/A	0.01 (2)
N/A	.0002 (1)	N/A	N/A
N/A	.005 (1)	N/A	0.08 (1)
N/A	.005 (1)	N/A	0.003 (1)
N/A	.00007 (1)	N/A	0.00007 (1)

No. of Facilities used for MBR evaluation (listed in Appendix D) : 8
No. of Facilities with a direct discharge to a watercourse in 1985 : 2
No. of Facilities with air emissions in 1985 : 5

Contaminant	No. of Assessable Facilities	FORECAST 1985 COMPLIANCE		
		No. of Facilities which were Expected to be Substantially in Compliance with Environmental Objectives	No. of Facilities which were NOT Expected to be Substantially in Compliance with Environmental Objectives	No. of Facilities where Compliance was Not Forecast
Particulates	N/A	N/A	N/A	N/A
Asbestos	N/A	N/A	N/A	N/A
Oxygen Demand	N/A	N/A	N/A	N/A
Suspended Solids	N/A	N/A	N/A	N/A
Phosphorus	N/A	N/A	N/A	N/A
Ammonia	N/A	N/A	N/A	N/A

No. of Assessable Facilities	FORECAST 1986 COMPLIANCE		
	No. of Facilities which were Substantially in Compliance with Environmental Objectives	No. of Facilities which were NOT Substantially in Compliance with Environmental Objectives	No. of Facilities where Compliance was Unknown
1	0	0	1
2	2	0	0
2	2	0	0
2	1	1	0
2	1	1	0
1	1	0	0

Abatement Measures for Non-complying Facilities

- Fiberglass Ltd. - Sarnia has no present abatement program for particulates.

- Control Orders or other abatement programs are in effect for all other facilities in non-compliance with objectives or criteria.

APPENDIX F

INVENTORY OF INCINERATORS

1985-1986 Actual

A. MUNICIPAL INCINERATORS

Collingwood, Simcoe County
Commissioners St., Toronto
Dresden, Kent County
Manitouwadge Township, District of Thunder Bay*
Port Colborne, R.M. of Niagara

B. ENERGY-FROM-WASTE INCINERATORS

SWARU, Hamilton
Victoria Hospital, London
(planned for 1986-87)

C. SPECIAL WASTE INCINERATORS

Syntath, St. Catharines
Tricil, Corunna

D. SEWAGE SLUDGE INCINERATORS

Ashbridges Bay WPCP, Toronto
Duffin Creek WPCP, Pickering
Greenway WPCP, London
Lakeview WPCP, South Peel (Mississauga)
Woodward Ave. WPCP, Hamilton

E. PATHOLOGICAL WASTE INCINERATORS

137 hospitals

The following pathological waste incinerators also accepted special wastes in 1985-86:

Queensway General Hospital, Etobicoke
St. James Cemetary and Crematorium, Toronto
York Central Hospital, Richmond Hill
Scarborough Centenary Hospital, Scarborough

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* Incinerator closed down September 1985

APPENDIX G

SURFACE AND GROUNDWATER QUALITY EVALUATION BY TERTIARY WATERSHED

SURFACE AND GROUNDWATER QUALITY EVALUATION BY TERTIARY WATERSHED

The evaluation of the 144 tertiary watersheds in the Province utilize this structure and coding system.

MAIN POLLUTION SOURCES	MAIN PROBLEM PARAMETERS	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF ENVIRONMENTAL PROTECTION EFFORTS
14 POSSIBILITIES:	19 POSSIBILITIES:	12 POSSIBILITIES:	9 POSSIBILITIES	4 POSSIBILITIES:
Ag = Agriculture In = Industrial/ Manufacturing Discharges Ur = Urban Runoff/ Stormwater Discharges STP = Sewage Treatment Facility Discharges Pr = Private Sewage/ Recreational Practices At = Atmospheric Deposition L = Landfill Site Leachates Trans = Specific, non-Ontario source S = Storage Facility Leaks R = Road Deicing Application Mi = Mineral Extraction (drilling, mining) WW = Water Well Drilling D = Dredging/Dredged Spoils Disposal O = Other	1) BOD 2) Suspended Solids 3) Dissolved Solids 4) Nutrients 5) Metals 6) Bacteria or Viruses 7) Acidity 8) Radionuclides 9) Organics 10) Ammonia 11) Chlorine 12) Cyanide 13) Phenolics 14) Sulphates 15) Chlorides 16) Arsenic 17) Pesticides 18) Nitrates 19) Other	a) Low dissolved oxygen b) Excessive aquatic growth c) Bacterial or viral contamination d) Acidification e) Poor aesthetics (objectionable deposits, odours, foaming, colour, etc.) f) Fish kills g) Destruction of fish habitat or the aquatic ecosystem h) Toxicity - to fish and other aquatic life - to wildlife - to domestic livestock i) Fish contamination - tainting to flesh - limit on consumption required j) Terrestrial vegetation and crops - toxicity - tainting - limit on consumption required k) Groundwater contamination l) Other	1) Cannot be used as drinking water supply 2) High water treatment costs 3) Contact recreation restricted 4) Non-contact recreation affected 5) Poor quality or reduced fishing (commercial, sport) 6) Special or unique features of watercourse damaged 7) Cannot be used for livestock watering 8) Cannot be used for irrigation 9) Other	a) Meets requirements specified by the relevant standard b) Abatement is required to meet existing standards, guidelines or criteria c) Additional regulatory programs/ policies are required d) Enforcement planned or underway

2 RECEPTOR POSSIBILITIES:

1 = Surface Water
2 = Groundwater

Example
Ag-1= Agricultural source; Surface Water as Receptor

SURFACE AND GROUNDWATER QUALITY EVALUATION BY TERTIARY WATERSHED

NORTHWESTERN REGION

WATERSHED NAME (NUMBER)	MAIN POLLUTION SOURCES	MAIN PROBLEM PARAMETERS	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF ENVIRONMENTAL PROTECTION EFFORTS
2BD					
31 Lake Superior Tributaries (from Lake Superior Prov. Park to Pukaskwa National Park)	At-1	7	d	5	c
	STP-1	4	b	6	a
	Pr-1	4	b	6	a
Comments: - Some lakes and streams have been measured to have pH less than 5.2 or alkalinity of 0 for short periods of time. - A small area at the mouth of Michipicoten River has a eutrophication problem. - Odour problems have been documented from Wawa waste treatment facilities (spring).					
2BC					
30 Lake Superior Tributaries (Pukaskwa National Park)	At-1	7	d	5	c
Comments: - Three lakes in Pukaskwa National Park are acidified. Studies of 6 monitored streams suggest the acidification is directly related to precipitation. Studies are under way to determine the long-term impacts associated with atmospheric deposition in the Park.					

NORTHWESTERN REGION (continued)

WATERSHED NAME (NUMBER)	MAIN POLLUTION SOURCES	MAIN PROBLEM PARAMETERS	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF ENVIRONMENTAL PROTECTION EFFORTS
2BB					
Pic River and 2 other Lake Superior Tributaries	In-1	3, 5, 10	a, g, h	4, 5, 6	a, d

Comments: - A lengthy period of operation by two base metal operations in Manitouwadge has resulted in the formation of a chemocline in Mose Lake which has not allowed natural destratification.

- The improved operations of Noranda (GECO) Mines and the closure of Wilroy Mines are not expected to result in restoration of natural lake conditions.

2BA						
1.	Lake Superior	In-1	2, 13, 6, 5	c, e, i, g, h	5, 4, 6	b, d
	Peninsula Harbour	STP-1	2, 13, 6	-	-	b, d

Comments: - The pulp mill owned and operated by James River Corporation at Marathon has not been meeting the BOD and suspended solids requirements set by MOE. A Control Order addressing these concerns was issued in 1983. It is anticipated that requirements for BOD, suspended solids and toxicity will be met by 1989. A submerged diffuser outfall is in place. The Ministry will evaluate effluent quality and receiving water quality in 1986.

- In general, existing water supplies and recreational uses are not adversely impacted. The recent completion of the STP in Marathon has alleviated earlier concerns regarding water quality.

- A draft Remedial Action Plan for the Peninsula Harbour Area of Concern is being prepared by the federal-provincial work team and is scheduled for completion by January 1989.

WATERSHED NAME (NUMBER)	MAIN POLLUTION SOURCES	MAIN PROBLEM PARAMETERS	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF ENVIRONMENTAL PROTECTION EFFORTS
2BA (continued)					
2. Lake Superior Jackfish Bay	In-1	13, 2, 6, 1, 9	c, e, i, g, h, a	5, 4	b, d
Comments: -	Kimberley-Clark of Canada Ltd. has not been able to meet effluent requirements since the start-up of the new mill. A Control Order was issued in 1982. The Control Order is aimed at ensuring compliance with suspended solids, BOD and toxicity requirements by 1986. The company has submitted plans designed to meet requirements and is currently meeting the Control Order schedule for implementing improvements.				
-	A draft Remedial Action Plan for the Jackfish Bay Area of Concern is being prepared by the federal-provincial work team and is scheduled for completion by January 1989.				
2AD Nipigon River	No water quality problems				
2AC, 2AE 23 Lake Superior Tributaries:					
1. Nipigon Bay	In-1	3, 13, 6, 1	a, c, i, e, h	5, 4	b, d
Comments: -	The combined effluent from Domtar Packaging and the Red Rock WPCP is in compliance with the suspended solids, BOD and fish toxicity requirements. Domtar has recently been modernized which has improved wastewater treatment. A new Control Order requires the company to address reducing the size of the effluent mixing zone.				
-	A draft Remedial Action Plan for the Nipigon Bay Area of Concern is being prepared by the federal-provincial work team and is scheduled for completion by January 1989.				

NORTHWESTERN REGION (continued)

WATERSHED NAME (NUMBER)	MAIN POLLUTION SOURCES	MAIN PROBLEM PARAMETERS	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF ENVIRONMENTAL PROTECTION EFFORTS
2AC, 2AE (continued)					
2. Thunder Bay	In-1	1, 2, 13, 6, 5	a, c, i, e, g, h	5, 4	d
	Ur-1	2, 6	-	3	-
	STP-1	2, 4, 1	-	6	d

Comments: - At present, some industrial effluents are not meeting MOE requirements. However, improvements in plant operations and pollution abatement facilities should lead to a general decrease in industrial loadings of BOD and suspended solids into the Bay. New Control Orders addressing BOD discharges were served to three Abitibi-Price paper mills in 1984.

- The completion of phosphorus removal facilities at the Thunder Bay Wastewater Treatment Plant has resulted in improved removal efficiencies for BOD and suspended solids.
- A draft Remedial Action Plan for the Thunder Bay Area of Concern is being prepared by the federal-provincial work team and is scheduled for completion by January 1989.

2AB Kaministiquia River - 5 Lake Superior Tributaries	In-1	1, 2	a, g, e	1, 4, 5	b, d

Comments: - BOD continues to be the single most critical problem in the Kaministiquia River and its delta owing to its limited assimilative capacity. However, both Great Lakes Forest Products and Industrial Grain Products are in compliance with BOD requirements in recently expired Control Orders. Combined BOD loadings have been reduced from 136 tonnes to 43 tonnes per day. The former Control Orders will be reviewed during 1986-87.

- The Kaministiquia River has been selected as a MISA pilot site.

NORTHWESTERN REGION (continued)

WATERSHED NAME (NUMBER)	MAIN POLLUTION SOURCES	MAIN PROBLEM PARAMETERS	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF ENVIRONMENTAL PROTECTION EFFORTS
2AA 8 Lake Superior Tributaries	No discharges of environmental significance				
5PA - 5PB Upper Rainy River	Recent studies concerning acidification potential of the Upper Rainy River basin have led to the conclusion that related problems are not imminent.				
5PC Lower Rainy River (Fort Frances Area)	In-1 Ag-1 STP-1	2, 4, 6 4 b 4	g, c, b - b	5, 3 - -	b, d - -
Comments: -	Bacteriological levels in the Rainy River, which are caused by pulp and paper mill discharges, are very high. Investigations are ongoing to determine possible health risks.				
-	Abatement measures at Boise Cascade, Fort Frances have resulted in improved effluent toxicity and BOD loadings. Apparent improvement in water quality has been noted in recent years.				
-	The 1985 discovery of 2,3,7,8 TCDD in Rainy River fish has prompted a major international investigation into potential sources.				
5PD Lake of the Woods Drainage	Plans are underway to evaluate the significance of lakeshore development on water quality.				

NORTHWESTERN REGION (continued)

WATERSHED NAME (NUMBER)	MAIN POLLUTION SOURCES	MAIN PROBLEM PARAMETERS	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF ENVIRONMENTAL PROTECTION EFFORTS
5PE					
Winnipeg River (from Lake of the Woods to the Manitoba border)	In-1	1, 2, 9, 6, 2	h, g	5	b, d
	STP-1	6, 1, 2	c	3	a, d
Comments: -	Owing to the substantial assimilative capacity of the Winnipeg River, current effects on water quality resulting from high bacteria and BOD are localized. A significant reduction in suspended solids loadings from the Boise Cascade pulp and paper operation is resulting in improved conditions. A Control Order requires the company to further reduce discharges.				
5QA					
Darkwater Lake	Mi-1	5	h, i	5	c, d
Comments: -	A Mattabi Mine waste rock pile produces acid drainage which has resulted in high zinc levels reaching Darkwater Lake. The lake has been measured to have zinc levels approximately 10 times higher than the Provincial Water Quality Objective.				
5QB					
Lac Seul Drainage	No discharges of environmental significance				

NORTHWESTERN REGION (continued)

WATERSHED NAME (NUMBER)	MAIN POLLUTION SOURCES	MAIN PROBLEM PARAMETERS	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF ENVIRONMENTAL PROTECTION EFFORTS
5QC					
1. Pakwash River	Mi-1	2, 5, 12	g, h	4, 5	b, d
Comments: -	The Griffith Mine has ceased operations at Ear Falls. The tailings disposal area is expected to be covered by high water levels in Bruce Lake. This will result in turbidity problems in Bruce and Pakwash Lakes and the English River.				
2. Balmer Lake Balmer Creek	Mi-1	12	h	5	b, d
Comments: -	Dickenson and Campbell Red Lake Mines have discharged tailings and effluents to Balmer Lake for some time. Control Orders have been issued. Very high concentrations of cyanide develops in Balmer Lake during ice cover. A fish kill occurred in 1985 in Balmer Creek. The outflow of Balmer Lake will be controlled in 1987 when cyanide levels are high.				
5QD					
Wabigoon River	In-1	5, 12, 6	i, a, e	5, 2	b, c
Comments: -	Historical deposits of mercury in the Wabigoon River continue to influence the fisheries in the English River System. A Federal-Provincial study, released in 1985, addressed potential remedial measures.				
-	Because of the low assimilation capacity of the Wabigoon River, current BOD loadings and sediment oxygen demand result in anoxic conditions in large stretches of the river system above Clay Lake.				
-	Great Lakes Forest Products has been operating a traditional secondary treatment system since the end of 1983, resulting in significantly improved effluent quality.				

NORTHWESTERN REGION (continued)

WATERSHED NAME (NUMBER)	MAIN POLLUTION SOURCES	MAIN PROBLEM PARAMETERS	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF ENVIRONMENTAL PROTECTION EFFORTS
5QE Lower English River	No discharges of environmental significance				
5R Lake Winnipeg Tributaries	No data available				
4A Hayes River 4B Hudson Bay Tributaries between Nelson and Severn Rivers 4C Severn River 4D Winisk River and Hudson Bay Tributaries 4E Hudson Bay and James Bay Tributaries between Winisk and Attawapiskat Rivers	No discharges of environmental significance				

NORTHEASTERN REGION

WATERSHED NAME (NUMBER)	MAIN POLLUTION SOURCES	MAIN PROBLEM PARAMETERS	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF ENVIRONMENTAL PROTECTION EFFORTS
2EA 19 Georgian Bay Tributaries (northern Georgian Bay)	At-1 L-2	7 13	g, d k	5, 6 1	b, c b
Comments: -	Some lakes or streams in the area have been measured to have pH of less than 5.2 or with alkalinity of 0. Consequently, fisheries problems are expected.				
2DD French River and Pickerel River	Ur-1 Ag-1 S-2 L-2	6, 4, 5 4, 2 19 (gasoline) 10, 13, 5	c, b b, e e e, k	3 5 1 5	b b, c b b, d
Comments: -	Urban drainage contamination has resulted in closing of some beaches on Lake Nipissing. Beaches near North Bay are similarly affected (Chippewa Creek). Evaluation of beach monitoring data took place in 1984-85.				
-	The Veuve River is seriously degraded by agricultural runoff for 30 to 50 km before entering Lake Nipissing.				
2DC Sturgeon River	At-1 In-1	7 1, 2, 6	d, g, h e, g	5 4, 5	c b, d
Comments: -	Some lakes and streams in the area have fisheries problems as a result of acidification. Work co-ordinated with MNR is required to define the problems.				
-	Six km of the lower Sturgeon River are affected for short periods of the year by discharges from MacMillan Bloedel at Sturgeon Falls. A program is in place to maintain dissolved oxygen at greater than 47% saturation.				
-	Sudbury Environmental Study, released in 1985, shows improvement in water quality in some study lakes.				

WATERSHED NAME (NUMBER)	MAIN POLLUTION SOURCES	MAIN PROBLEM PARAMETERS	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF ENVIRONMENTAL PROTECTION EFFORTS
2DB Lower Wanapitei River	In-1, Mi-1 At-1 R-2	5 7 15	g, h d k	5 - 9 (taste)	b, d c -
Comments: -	Portions of Romford Creek and Coniston Creek experience severe problems with industrial drainage and tailings discharges along with atmospheric metal loadings and runoff from old industrial fume kill zones. Revegetation efforts, which are under way, will reduce erosional impacts in the long-term.				
-	Sudbury Environmental Study, released in 1985, shows improvement in water quality in some lakes studied.				
-	Road de-icing problems are usually solved shorty after winter has ended. The problem remains becase new or recurring problem areas are reported each year.				
2DA Upper Wanapitei River	At-1	7	d, g, h	5	c
Comments: -	Some lakes and streams in the area have fisheries problems from acidification. Work co-ordinated with MNR is required to better define and solve the problems.				
-	Sudbury Environmental Study, released in 1985, documents improvement in water quality in some lakes studied. Further monitoring is planned.				
2JE Lake Temiskaming - Ottawa River	Ag-1 Mi-1 O-2-1(spill) S-2	4, 2 5 5 19 (gasoline)	b, c g k, h e (odours in basements)	4 1, 5 5 9	b, c b, d, c b b

WATERSHED NAME (NUMBER)	MAIN POLLUTION SOURCES	MAIN PROBLEM PARAMETERS	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF ENVIRONMENTAL PROTECTION EFFORTS
2JE (continued)					
Comments: - Wabi River and several other small streams have been degraded by agricultural runoff. Work with Ministry of Agriculture is required to solve the problem. - The Cobalt mining camp has left serious mercury and arsenic contamination in localized areas, especially Farr Creek. Limited consumption of fish is recommended from some lakes in the area. - A swimming area in vicinity of Town of Mattawa shows elevated bacterial levels. The cause is being investigated. - A spill of zinc concentrate (1970s) continues to leach zinc to groundwater and Four Mile Creek in concentrations that may cause fisheries problems in spite of extensive clean-up efforts. Water quality monitoring to evaluate improvements is continuing.				
2JD Montreal River	At-1 R-2	7 15	g, d k	5, 6 1	b, c d
Comments: - Several lakes and streams have fisheries problems that are believed to be associated with acidification. Work co-ordinated with MNR is required to better define problems and to reduce the environmental impacts.					
2JC Blanche River	Ag-1 STP-1	4, 2 4	b, e b, a, e	4 4	b, c a, d
Comments: - The Blanche River exceeds phosphorus guidelines for 30 to 50 km due to erosion and agricultural runoff. - Eutrophication is a problem in Round Lake and Murdock Creek. - Phosphorus removal was initiated in 1981 for Kirkland Lake. Improvements in water quality have been documented in Round Lake. Water quality improvement continue to be monitored.					

NORTHEASTERN REGION (continued)

WATERSHED NAME (NUMBER)	MAIN POLLUTION SOURCES	MAIN PROBLEM PARAMETERS	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF ENVIRONMENTAL PROTECTION EFFORTS
2CG	Ag-1	2, 4	g, b	5	c
Manitoulin Island	Pr/Ag-2	6	k	1	b
Comments: -	Agricultural drains and runoff have caused minor problems in some localized areas.				
2CF					
1. Junction Creek (major tributary to Spanish River)	In-1, Mi-1	4, 10, 5	g, h, a	5, 4, 1	b, c, d
	STP-1	4, 1	g, h, a	5, 4, 1	b
	Ur-1	4, 5	e	5	b
	In-2	14	k	2	b
	R-2	15	k	1	d
Comments: -	Junction Creek receives many municipal discharges and large industrial discharges, plus urban drainage and aerial loadings of metals from the mining industry. Abatement is planned and under way in some places; more will be required in the future.				
-	Degraded water from Junction Creek recharges municipal aquifer and reduces water quality of Garson municipal well.				
-	Phosphorus removal has been recommended for Sudbury STP.				
2. Vermilion River (major tributary to Spanish River)	R-2	15	k	-	d
	STP-1	4	b	-	a
	At-1	5	-	-	-
	S-2	19 (fuel oil)	k	-	d
Comments: -	During low flow periods, localized eutrophication reduces the appeal of Vermilion River to recreational users. The inflow of the Onaping River is expected to have localized impacts on the Vermilion River.				

NORTHEASTERN REGION (continued)

WATERSHED NAME (NUMBER)	MAIN POLLUTION SOURCES	MAIN PROBLEM PARAMETERS	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF ENVIRONMENTAL PROTECTION EFFORTS
2CF (continued)					
3. Onaping River (major tributary to Spanish River)	Mi-1	5	g, h	5	c
	S-2	19 (fuel oil)	k	-	d
	S-2	15	k	9 (taste)	d
Comments: -	Moose Creek (drainage from Inco and Falconbridge tailings) affects the river for approximately 16 km. Some lakes in this watershed are acid sensitive.				
4. 7 North Channel tribs. & minor tribs. to Spanish River	At-1	7, 5	d, g	5	c
Comments: -	Several lakes and streams have fisheries problems associated with acidification and/or elevated metal concentrations. Efforts together with MNR are required to better define the problems.				
-	Sudbury Environmental Study, released in 1985, shows improved water quality in some of the lakes studied.				
2CE	In-1	9	i	5	a
Spanish River	D-1	5	-	-	-

NORTHEASTERN REGION (continued)

WATERSHED NAME (NUMBER)	MAIN POLLUTION SOURCES	MAIN PROBLEM PARAMETERS	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF ENVIRONMENTAL PROTECTION EFFORTS
2CE (continued)					
Comments: -	The Spanish River is affected by the discharge from E.B. Eddy for 50 km downstream. Periodic fish kills occur. Abatement has been accomplished through a Control Order issued to the company. The company was granted government incentives under the Canada-Ontario Pulp and Paper Facility Improvement Program and has installed and operated a number of water pollution abatement systems since December 1983. These abatement measures are expected to reduce the degree and incidence of fish tainting and toxicity in the effluent. Fish tainting studies are planned for 1986. An attempt to provide higher flows during summer is being formulated and a low flow augmentation study (MOE, MNR, E.B. Eddy and INCO) has been completed. Water management plans may be introduced through an MNR initiative.				
-	A major loss of black liquor occurred in July, 1983.				
-	Dissolved oxygen objectives have been met since the introduction of new treatment facilities in December 1983.				
-	A draft Remedial Action Plan for the Spanish River Area of Concern is being prepared by the federal-provincial work team and is scheduled for completion by February 1988.				
2CD	Mi-1	8, 10	g, d, h	5, 2, 4	b, d
4 North Channel	STP-1	4	b, e	5, 2, 4	a
Tributaries	Ur-1	4	b	5	d
	L-1	5, 13	e	-	b
Comments: -	Portions of the Serpent River are affected by uranium discharges and discharges that occurred before abatement took place. Water quality is improving in these areas.				
-	Elliot Lake, Esten Lake and Angel Lake were degraded by municipal discharges in the past; water quality improvements with recent abatement efforts have been documented.				
-	Leachate from municipal landfill sites reduces water quality of Angel Creek below provincial objectives.				
-	A field study identified periodic ammonia toxicity problems in the upper Serpent River.				

NORTHEASTERN REGION (continued)

WATERSHED NAME (NUMBER)	MAIN POLLUTION SOURCES	MAIN PROBLEM PARAMETERS	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF ENVIRONMENTAL PROTECTION EFFORTS
2CC Lower Mississagi River	At-1	7	-	-	c
Comments: -	No effects monitored at this time.				
2CB Upper Mississagi River	At-1	7	d	5	b, c
Comments: -	Some lakes or streams in the area have been measured to have pH less than 5.2 or with alkalinity of 0, for short periods of time, as a result of acidic deposition.				
2CA					
1. 14 St.Mary's River North Channel Tributaries	In-1	13, 12, 10	h, g, e	5	b, d
	At-1	7	-	-	c
	R-2	15	e	1	d
	Pr-2	18	k	1	d
Comments: -	Some of the smaller tributaries of the St. Mary's River in the urban and industrial areas have been degraded from their natural conditions. Some lakes and streams are acid sensitive but no effects have been monitored.				

WATERSHED NAME (NUMBER)	MAIN POLLUTION SOURCES	MAIN PROBLEM PARAMETERS	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF ENVIRONMENTAL PROTECTION EFFORTS
2CA (continued)					
2. St. Mary's River	In-1-2	9,10,12,13,5,19	k, i,e, g	1, 5, 3	b, c, d
	STP-1	6, 4	c, b	3, 5	b, d
	Ur-1	6	c	3	a
	WW-2	15	k	1	d
	L-1	-	-	-	b
	D-1	5, 13	g	5	b

Comments:
- Major sources of pollution to the St. Mary's River are Algoma Steel, St. Mary's Paper, the City sewage treatment plant and sewer system overflows.
- Disposal of wastes from Algoma Steel potentially impact on surface and groundwater. A program of hydrogeological and surface water testing by Algoma Steel is under way.
- A new Control Order was issued to Algoma Steel Corp. Ltd. covering all outstanding water contaminants.
- Phenolic levels in the river during 1983, the lowest since 1970, approached Provincial water quality objectives. This reduction is due to increased river flows along the Ontario shore resulting from the newly commissioned hydroelectric power plant, and also is due to decreased production at the steel mill.
- St. Mary's Paper has installed a new clarifier and a diffuser outfall to reduce suspended solids and BOD loadings and to facilitate rapid mixing in the river.
- The expansion of municipal pumping station capacity in 1978 led to a reduction of overflows and some improvements in river quality.
- A new sewage treatment facility for West End has been constructed and is operational. Reduced overflows are expected and will alleviate loadings from the existing plant. Also, by 1986 a new water supply for the city will be completed.
- Deep well drilling tapped saline groundwater and contaminated the shallow aquifer being used for private water supplies in the Village of Echo Bay. All deep wells have been plugged. Salt levels are declining.
- Transboundary pollution in the Lake George Channel (U.S. side) is attributable to discharges from Algoma Steel and the Sault Ste. Marie STP.

NORTHEASTERN REGION (continued)

WATERSHED NAME (NUMBER)	MAIN POLLUTION SOURCES	MAIN PROBLEM PARAMETERS	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF ENVIRONMENTAL PROTECTION EFFORTS
2CA (continued) 2. St. Mary's River					
Comments: - A program of water quality monitoring is under way. A draft Remedial Action Plan was submitted to the IJC in 1985. - As part of a bi-national/Upper Great Lakes Connecting Channels study, the river ecosystem is being investigated. A final report is expected by 1987-88.					
2BF 22 Lake Superior Tributaries (southeast Lake Superior)	At-1	7	-	-	c
Comments: - No effects monitored at this time.					
2BE 21 Lake Superior Tributaries (Lake Superior Provincial Park area)	At-1	7	d	5	c
Comments: - Some lakes and streams in the area have been measured to have pH less than 5.2 or alkalinity of 0 for short periods of time.					

WATERSHED NAME (NUMBER)	MAIN POLLUTION SOURCES	MAIN PROBLEM PARAMETERS	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF ENVIRONMENTAL PROTECTION EFFORTS
2BD 31 Lake Superior Tributaries (Magpie River)	STP-1	4, 19 (hydrogen sulphide)	e, b	6	b
Comments: -	In recent years winter anoxic conditions in Wawa sewage lagoons cause odour problems downstream. Nutrient losses to Magpie River cause localized growth of nuisance algae. Wawa is presently converting the lagoons to aeriated lagoons with phosphorus removal.				
4F Attawapiskat River 4G Lower Albany River and James Bay Tributaries between Attawapiskat and Moose Rivers 4J Upper Missinaibi River 4K Kwataboahegan River	No discharges of environmental significance				
4LA Upper Mattagami River	R-2	15	e	1	d

NORTHEASTERN REGION (continued)

WATERSHED NAME (NUMBER)	MAIN POLLUTION SOURCES	MAIN PROBLEM PARAMETERS	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF ENVIRONMENTAL PROTECTION EFFORTS
4LB					
Middle Mattagami River	In-1	2, 9	e	5, 4	b, d
	Mi-1	5, 7	d, g, h	5	d

Comments: - Abitibi-Price Pulp Mill at Smooth Rock Falls is the major source affecting the Mattagami River for 5 km downstream. A Control Order is in place and should resolve some of the problems if completed satisfactorily. A mathematical dissolved oxygen model predicting the relationship between river oxygen concentrations, mill BOD load and flow was completed in 1983-84. Additional abatement measures are required to meet the dissolved oxygen objectives under all conditions.

- Leachate bearing toxic metals from the abandoned Kam-Kotia mine is degrading water quality in the Kamiskotia River basin. Joint MOE/MNR action is planned.

4LC - 4LE					
Groundhog River and Upper Kapuskasing River	No data available				

4LF					
Lower Kapuskasing River	In-1	1, 9	a, e, g	5, 4, 6	b, d
	O-1(logdrive)	1, 2, 9	a, e, g	5, 4, 6	b, d, c

Comments: - Improvements in suspended solids and BOD loadings in the Kapuskasing River has been noted as the Spruce Falls Power and Paper mill is complying with a new Control Order. However, it is anticipated that the dissolved oxygen objective will still be exceeded during low flows.

- The river is seriously affected by logdriving practices and further work is required with Spruce Falls Power and Paper and MNR to define and resolve these problems. Aesthetics are affected by bark and fibre deposits. A Control Order is in place. Conditions are improving.

WATERSHED NAME (NUMBER)	MAIN POLLUTION SOURCES	MAIN PROBLEM PARAMETERS	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF ENVIRONMENTAL PROTECTION EFFORTS
4LG - 4LM Missinaibi River	S-2	19 (gasoline)	k	1	d
4MA Upper Abitibi River	In-1	5	i	3	b
Comments: -	Discharges from abandoned Quebec gold mines have resulted in fish tainting. Limited consumption is recommended. As the mines are not under Ontario's jurisdiction, work is required by Quebec and/or the Federal Government.				
4MB Black River	No data available				
4MC Middle Abitibi River	In-1 L-2	1, 2 3, 5, 13	g, e k	5, 4 1	a d
Comments: -	A Control Order is in place and has been completed satisfactorily. Problems caused by BOD and suspended particulate loadings have been resolved. Dissolved oxygen objectives in the river were met the summer of 1984. Abitibi-Price is monitoring during warm water period.				

NORTHEASTERN REGION (continued)

WATERSHED NAME (NUMBER)	MAIN POLLUTION SOURCES	MAIN PROBLEM PARAMETERS	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF ENVIRONMENTAL PROTECTION EFFORTS
4MD					
Fredrick House River	Mi-1	5	-	-	-
	Ur-1	4	b	3	-
	S-2	19 (gasoline)	c (vapours in sewers)	9	b

Comments: - Discharge to Porcupine River from lead/zinc mining.

4ME Lower Abitibi River	No data available
4MF French River	
4NB Upper River Turgeon	
4NC 7 James Bay Tributaries	

WATERSHED NAME (NUMBER)	MAIN POLLUTION SOURCES	MAIN PROBLEM PARAMETERS	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF ENVIRONMENTAL PROTECTION EFFORTS
2GC	Ag-1-2	2, 4, 10, 18	e, g, h, k	5, 4, 1, 2	b, c
15 Lake Erie	STP-1	4, 11, 1	e, h, c	3, 4, 5	b, d
Tributaries	In-1	1	a, e, h	5	b, d
(eastern Lake Erie)	L-2	-	k	-	-
	S-2	-	k	-	-

Comments:
- Agricultural activities have resulted in heavy erosion and sedimentation throughout the area. Soil conservation is required. Livestock operations cause manure spills and trampled stream banks. Some high quality trout streams are affected by heavy irrigation withdrawals by tobacco farmers. OMAF soil conservation team is now active in this area.
- Improved sewage treatment is under way at St. Thomas and Aylmer.
- A new wastewater treatment system has been installed at the Ford plant in Talbotville.
- The main groundwater quality problem in this area is the contamination of shallow aquifers by agricultural fertilizers and potentially by pesticides.
- Minor localized groundwater problems have resulted from landfill sites and storage facility leaks.
- A study to evaluate the impact on water quality as a result of land use changes has been completed.
- Thirty million dollars have been committed to reduce phosphorus loadings to Lake Erie by 200 tonnes a year over 5 years through the federal-provincial Soil and Water Environmental Enhancement Program (SWEEP).

2GF					
9 Lake Erie	Ag-1-2	2, 4, 18	e, g, k	4, 5, 6, 1, 2	b, c
Tributaries	S-2	-	k	1	-
(central Lake Erie)	Pr-2	6, 18	k	1, 2	-

WATERSHED NAME (NUMBER)	MAIN POLLUTION SOURCES	MAIN PROBLEM PARAMETERS	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF ENVIRONMENTAL PROTECTION EFFORTS
2GF (continued)					
Comments: - Severe erosion, particularly in the western part of the watershed has resulted in turbidity in Rondeau Harbour and has drastically affected fishery and general ecology. A local farming committee has been established to work with government agencies on implementing erosion-control measures. Numerous voluntary control measures (e.g. fall cover crops) are being put into place. Improvements in Rondeau Bay will depend largely on the efforts of OMAF and local farmers to reduce watershed erosion. - Thirty million dollars have been committed to reduce phosphorus loadings to Lake Erie by 200 tonnes a year over 5 years through the federal-provincial Soil and Water Environmental Enhancement Program (SWEEP). - The main groundwater quality problem in this area is the contamination of shallow aquifers by agricultural fertilizers and locally by pesticides. - Minor localized groundwater problems have resulted from storage facility leaks and private sewage systems.					
2GH					
1. Essex County, Lake Erie Tributaries	Ag-1-2	2, 4, 18	e, g, k	5, 4, 1, 2	b, c
	Pr-1-2	6, 1, 4, 18	c, a, e, k	3, 4, 5, 1, 2	b, c
	Ur-1	5, 6, 2	c, h, e	3, 4, 5	b
	L-2	-	K	-	-
Comments: - Row crop agriculture and agricultural drainage have caused heavy erosion and sedimentation in the area. Efforts are required to preserve soils and streams. - Many septic systems are on tight soils which have resulted in overflows affecting perhaps one half of the watershed. Solutions are costly and technically difficult. - Urban drainage in Windsor has damaged Little River and Turkey Creek. A localized PCB problem in Turkey Creek has been found. - The main groundwater quality problem in the area is the contamination of shallow aquifers by agricultural fertilizers and locally by pesticides.					

SOUTHWESTERN REGION (continued)

WATERSHED NAME (NUMBER)	MAIN POLLUTION SOURCES	MAIN PROBLEM PARAMETERS	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF ENVIRONMENTAL PROTECTION EFFORTS
2GH					
1. Essex County, Lake Erie Tributaries (continued)					
Comments: - Minor, localized groundwater problems have resulted from landfill sites and private sewage systems.					
- Thirty million dollars have been committed to reduce phosphorus loadings to Lake Erie by 200 tonnes a year over 5 years through the federal-provincial Soil and Water Environmental Enhancement Program (SWEEP).					
2. Lake Erie	Ag-1	1,2,4,6,19 (PCBs)			
Wheatley Harbour	In-1	1,2,4,6,19 (PCBs)	a, c, e, g, i	1, 3, 5	c
Comments: - Omstead Foods Ltd. has reduced BOD and suspended solid loadings through the installation of an additional clarifier and two additional mechanical aerators. Phosphorus removal facilities were installed in 1983.					
- A draft Remedial Action Plan for the Wheatley Harbour Area of Concern is being prepared by the federal-provincial work team and is scheduled for completion by November 1988.					
3. Detroit River	Ur-1	6, 9, 5	c, g	3, 5	b, d
	STP-1	2, 6, 9, 5	c, g	3, 5	b, d
	Trans-1	2, 4, 6, 5, 9	c, g	3, 5	b, d
Comments: - A $20 million program to provide a sewage collection system, including a pumping station and forcemain, in Sandwich West Township has been completed.					
- The City of Windsor has expanded its westerly wastewater plant to 164,000 m^3/d (36 MIGD). The expanded facility will treat additional wastewater from Sandwich West Township.					
- At Amherstburg, the existing primary sewage treatment plant has been expanded.					
- Plans are under way to expand Windsor's Little River STP, and a Pollution Control Strategy for Windsor is under consideration.					

WATERSHED NAME (NUMBER)	MAIN POLLUTION SOURCES	MAIN PROBLEM PARAMETERS	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF ENVIRONMENTAL PROTECTION EFFORTS
2GH 3. Detroit River (continued)					
Comments: - Transboundary pollution in the lower river is attributable to inputs from the Rouge River (Detroit) and from the Detroit, Michigan STP. - The Detroit River is being studied as part of the international Upper Great Lakes Connecting Channel Study, reporting in 1987. - As part of the Agreement between Michigan and Ontario, a statement outlining requirements for remedial action will be submitted to the Governor of Michigan, the Premier of Ontario and to IJC by March 1989. The final Remedial Action Plan will be prepared after the Upper Great Lakes Connecting Channels Study has been completed.					
2GD Upper Thames River	Ag-1-2 STP-1 Ur-1 L-2 Pr-2 R-2	1, 2, 4, 10, 18 4, 6, 11 2, 4, 6 - 6, 18 15	b, f, g, k b, c, a b, c, c k k	1, 2, 5, 7 5, 3, 4 5, 3 - 1, 2	b, c b, d b, d - -
Comments: - Problems resulting from agricultural activities include erosion, sedimentation, manure spills and livestock trampling of stream banks. Soil conservation is promoted through the Diffuse Source Control Program. - Sewage treatment plants provide adequate treatment but limited stream dilution is a problem. Remedial measures are being investigated. - The Stratford-Avon River Environmental Management Project addressed remedial measures for the Avon River, and some of these are being implemented. - Minor, localized groundwater problems relate to agricultural contaminants, landfill leachate, domestic sewage and road de-icing. Shallow wells in the Village of Komaka have elevated nitrate levels resulting from local septic systems. - An MOE funded study to model the fate of the herbicide atrazine on an agricultural watershed is underway.					

WATERSHED NAME (NUMBER)	MAIN POLLUTION SOURCES	MAIN PROBLEM PARAMETERS	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF ENVIRONMENTAL PROTECTION EFFORTS
2GE					
Lower Thames River	Ag-1-2	2, 4, 18	e, g, k	4, 5, 1, 2	b, c
	Pr-2	6, 18	k	1, 2	-
	S-2	-	k	-	-
Comments: -	Erosion and sedimentation are common problems throughout the area. Promotion of erosion control is undertaken through OMAF's new soil conservation team.				
-	The main groundwater quality problem in the area is the contamination of shallow aquifers by agricultural fertilizers and locally by pesticides.				
-	Minor, localized groundwater problems have resulted from storage facility leaks and private sewage systems.				
2GG					
1. St. Clair River	Ag-1-2	2, 1, 10, 18	g, f, e, k	5, 4, 2, 1	b, c
- Lake St. Clair Tributaries	In-1	1, 3, 9	e, g, i	5, 4	b, c
	Pr-2	6, 18	k	1, 2	-
	S-2	-	k	-	-
Comments: -	Agricultural activity has resulted in heavy erosion and sedimentation throughout the area. Conservation measures are required.				
-	The petroleum extractive industry discharges brine water to streams in the Petrolia area in exceedence of the livestock watering objective.				
-	The main groundwater quality problem in the area is the contamination of shallow aquifers by agricultural fertilizers and potentially by pesticides.				
-	Minor, localized groundwater problems have resulted from storage facility leaks and private sewage systems.				
2. St. Clair River	In-1	9, 13, 5	g, h, i	5	a, b, d
	Ur-1	6, 2	c	3, 2	b, d

SOUTHWESTERN REGION (continued)

WATERSHED NAME (NUMBER)	MAIN POLLUTION SOURCES	MAIN PROBLEM PARAMETERS	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF ENVIRONMENTAL PROTECTION EFFORTS
2GG 2. St. Clair River (continued)					
Comments: - Industries such as Esso Chemical, Imperial Oil, Polysar, Dow Chemical and Suncor at Sarnia and Shell, Petrosar, Dupont and Ethyl Corporation at Corunna contribute to organic contaminants and residual mercury in the river. The bio-oxidation treatment plant at Polysar was completed in 1983 and is expected to reduce the organic pollution level of the river. The Township Ditch was extended to a distance of 70 m from the shoreline and will facilitate greater mixing for Polysar and all other industries located along the Ditch. The impact of contaminant build-up on downstream industrial intakes will be reduced. - Dow Chemical has extended the Second Street sewer to promote efficient mixing. - Sewer system overflows in the Sarnia area have led to beach closures in Sarnia Bay. - A variety of studies are taking place in conjunction with the international Upper Great Lakes Connecting Channels Study and through MISA.					
2FF 18 Lake Huron Tributaries (south Lake Huron)	Ag-1-2	4, 2, 10, 18	b, f, g, k	5, 4, 7, 1, 2	b, c
Comments: - Row crops and livestock operations have caused erosion, sedimentation and manure impairment to streams. The Ausable-Bayfield Conservation Authority is aggressively demonstrating projects on erosion control and stream bank stabilization. MOE has funded a project which identified major livestock operations which have adverse effects on water quality. The project methods will likely be applied in other areas to assist MOE with its farm management program. Farms with high potential to pollute are being inspected and suggestions are made for remedial measures.					

WATERSHED NAME (NUMBER)	MAIN POLLUTION SOURCES	MAIN PROBLEM PARAMETERS	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF ENVIRONMENTAL PROTECTION EFFORTS
2FF (continued)					
Comments: -	Groundwater quality problems relate primarily to agricultural animal wastes and pesticides. Wells in the Village of Hensall have been contaminated from nearby farms. Investigations are under way. Modifications to agricultural practices will be promoted to minimize the problem.				
2FE	Ag-1-2	4, 2, 10, 18	b, e, g, k	7, 5, 6, 1, 2	b, c
Maitland River and	STP-1	4, 6	b, c, e	5, 7, 1	b, d
2 Other	Mi-1	15	g	-	-
Tributaries	Pr-2	6, 18	k	1, 2	d
	S-2	-	k	-	-
	L-2	-	k	-	-
Comments: -	Agricultural activity has degraded general water quality in recent years. The Maitland Conservation Authority is attempting to challenge drainage proposals and to rehabilitate some streams.				
-	Presently, the STPs at Listowel and Milverton adversely affect several kilometers of stream during discharge. Expansion at Listowel STP is being considered.				
-	The main groundwater quality problem in this area is the contamination of shallow aquifers by private sewage systems.				
-	Minor, localized groundwater quality problems have resulted from agricultural fertilizers and animal wastes, landfill leachate and storage facility leaks.				
-	Saline water is discharged from the salt mine settling basin at Goderich.				

SOUTHWESTERN REGION (continued)

WATERSHED NAME (NUMBER)	MAIN POLLUTION SOURCES	MAIN PROBLEM PARAMETERS	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF ENVIRONMENTAL PROTECTION EFFORTS
2FD 23 Lake Huron Tributaries (northern Lake Huron)	Ag-1-2	4, 2, 18, 19 (temperature)	e, g, k, l (thermal)	5, 6, 1, 2	b, c
	In-1	4, 19 (temperature)	b, e, l (thermal)	5, 6, 9 (fish entrainment)	b, c, d
	Pr-2	6, 18	k	1, 2	-
	L-2	-	k	-	-
Comments: -	Row cropping, drainage and intensive livestock operations have adverse effects on water quality in the area. Streams are used for recreational activities and are ecologically sensitive.				
-	Industries (cheese factories and fish hatcheries) adversely affect water quality on a localized basis. Bruce Nuclear Generating Station and future associated industry may further degrade water quality.				
-	Minor, localized groundwater quality problems have resulted from private sewage systems, agricultural fertilizers, animal wastes, and landfill sites.				
2FC Saugeen River	Ag-1-2	4, 2, 19 (temperature)	b, e, k, l (thermal)	6, 5, 1, 2	b, c
	STP-1	4	b, e	5	b, c
	In-1	4, 10, 19 (temperature)	b, g, l (thermal)	5, 6	b, c, d
	L-2	-	k	-	-
	R-2	-	k	-	-
	S-2	-	k	-	-
	Pr-2	6, 18	k	1, 2	-
Comments: -	Agricultural row cropping, drainage and intensive livestock operations are increasing in this area. Streams are recreationally important and ecologically sensitive.				

WATERSHED NAME (NUMBER)	MAIN POLLUTION SOURCES	MAIN PROBLEM PARAMETERS	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF ENVIRONMENTAL PROTECTION EFFORTS
2FC (continued)					
Comments: - Industrial impacts are very localized. Fish hatcheries now require Certificates of Approval.					
- Sewage treatment effluent only incurs localized impacts.					
- Minor, localized groundwater quality problems have resulted from agricultural fertilizers, private sewage systems, landfill leachate, road de-icing, and storage facility leaks.					
2FA Bruce Peninsula Streams	Pr-1-2	4, 6, 18	b, e, k	4, 5, 1, 2	b, c, d
	Ag-1-2	2, 4, 18, 19 (temperature)	g, e, c, k, l (thermal)	6, 5, 1, 2	b, c
	In-1	4, 2	b	5	d
	L-2	-	k	-	-
	R-2	-	k	-	-
	S-2	-	k	-	-
Comments: - Agricultural drainage projects are threatening some streams in the area. Fences are required to keep livestock away from stream banks.					
- Industrial impacts from fish hatcheries are very minor. Fish hatcheries now require Certificates of Approval.					
- Septic tank leakage and seepage from cottage sources are affecting localized areas of surface and groundwater.					
- Minor, localized groundwater quality problems have resulted from agricultural fertilizers, road de-icing, storage tank leaks, and landfill leachate.					
- The bedrock aquifer in parts of this watershed contains naturally elevated levels of barium and fluoride.					

SOUTHWESTERN REGION (continued)

WATERSHED NAME (NUMBER)	MAIN POLLUTION SOURCES	MAIN PROBLEM PARAMETERS	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF ENVIRONMENTAL PROTECTION EFFORTS
2FB 14 Georgian Bay Tributaries (western Georgian Bay)	Ag-1-2	4, 2, 18, 19 (temperature)	b, g, k, l (thermal)	6, 5, 1, 2	b, c
	In-1	4, 5, 19 (temperature)	b, g, l (thermal)	5, 6	b, c, d
	Pr-1-2	4, 6, 18	b, e, k	5, 6, 1, 2	b, c
	L-2	-	k	-	-
	S-2	-	k	-	-
	R-2	-	k	-	-

Comments: - Agricultural activity is increasing in this area. Streams are recreationally important and ecologically sensitive.
- Fish hatcheries (main industry) require Certificates of Approval.
- Minor, localized groundwater quality problems have resulted from agricultural fertilizers, private sewage systems, landfill sites, road de-icing, and storage facility leaks.

WATERSHED NAME (NUMBER)	MAIN POLLUTION SOURCES	MAIN PROBLEM PARAMETERS	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF ENVIRONMENTAL PROTECTION EFFORTS
2HB					
Lake Ontario:	STP-1	10, 1, 4	a, b	5	b, d
Hamilton Harbour	In-1	5, 10, 13	a, i	5	b, d
	Ur-1	2, 1	e, g	5	b, c

Comments:
- The Harbour is a source of contaminants and nutrients to Lake Ontario. The Harbour plume occasionally affects the Hamilton and Burlington WTP intakes.
- The Federal harbour status restricts use. Waters are being used for commercial navigation, industrial cooling, waste reception and recreational boating. Water quality has improved since the 1960s through continued industrial and municipal abatement. Dissolved oxygen problems are aggravated by contaminated sediments.
- A technical advisory committee has recommended partial dredging of contaminated sediments in the Windermere Basin with on-site disposal.
- The Water Resources Branch completed a technical summary and management options report in August 1985 and a Trace Organics Report in June 1986.
- A major public involvement program in 1986 will attempt to identify concensus positions on Harbour water use. Remedial options will be developed during 1986-87 and MISA regulations for the steel industry will be developed during 1987-88.

2HA						
1.	Western Lake Ontario Tributaries and waterfront (from Niagara River to Burlington)	Ag-1	4, 6, 2	g, e, c	3, 5	b, c
		Ur-1	6	c	3	a
		R-2	15	k	1, 2	d

Comments:
- Abatement policies are required to reduce agricultural loadings of bacteria and turbidity.
- Stormwater discharges impact on Lake Ontario beaches following rainfall.
- Shallow over burden on fractured bedrock makes groundwater susceptible to road salt contamination.

WEST CENTRAL REGION (continued)

WATERSHED NAME (NUMBER)	MAIN POLLUTION SOURCES	MAIN PROBLEM PARAMETERS	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF ENVIRONMENTAL PROTECTION EFFORTS
2. Lower Welland River	In-1	10, 2, 5	h, e, g	5	b, d
	STP-1	10, 4, 2	h	5	a, d
	Ur-1	2, 6, 4	c, e	3, 5	b, c
Comments: -	Industries are under Control Orders or abatement programs.				
-	Welland STP is being upgraded to include partial nitrification.				
-	Water quality is being investigated more thoroughly as part of the Niagara River Study.				
3. 12 Mile Creek	STP-1	1, 4, 6	c	5	c, d
	L-1	9	i	5	c, d
	In-1	1, 2, 6	c, e, g, i	3, 5	a, d
	Ur-1	6, 1	c	3	b, c
	Pr-1	1, 4, 6	c		
Comments: -	Paper mill and combined sewer discharges have resulted in elevated bacterial levels along the Lake Ontario shoreline and also in 12 Mile Creek. The St. Catharines Pollution Control Study is under way. It includes a toxics survey to determine why spottail shiners have elevated levels of dibenzofurans, and a source assessment of bacterial contaminating to Lake Ontario beaches. Four Lake Ontario beaches are permanently posted.				
-	Ontario Hydro diverts 184 m^3/s (6,500 cfs) from Welland Ship Canal to 12 Mile Creek.				
4. Niagara River	STP-1	9, 4, 6	i, c	5, 2, 3	b, d
	In-1	9, 5	i	3, 5, 2	a, c
	Trans-1	9, 5	i	5, 2	c
	L-1-2	9, 5, 10, 12	i	5, 2	c, d

WATERSHED NAME (NUMBER)	MAIN POLLUTION SOURCES	MAIN PROBLEM PARAMETERS	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF ENVIRONMENTAL PROTECTION EFFORTS
2HA 4. Niagara River (continued)					
Comments: - Direct and indirect industrial and municipal discharges, contribute to trace contaminant (organic and inorganic) loadings in river, with the majority (both in number and flow) on the U.S. side. Exceedences of aquatic life criteria for some heavy metals and chlorinated organics as well as for phosphorus and bacteria are mainly confined to the U.S. side of the upper Niagara River. These sources may potentially impact on water supplies. Surveys of all Ontario point sources were conducted in 1981 and 1982 to evaluate loadings. SPDES permit reviews for major U.S. point sources will include trace contaminants. A $1 million pilot scale granular activated carbon treatment system has been approved for testing at the Niagara Falls, Ontario WTP. - At least four of the 215 disposal sites on the U.S. side of the river are known to have leaked contaminants into the river (Love Canal, Hyde Park, 102nd Street and Hooker "S" area) and may potentially impact on water supplies. In addition to organics and metals, some of these sites contain radioactive materials. Further abatement work is required on these as well as other high priority sites. - The Niagara River Toxics Committee Report, released in November 1984, provided recommendations for long-term monitoring and control of point and non-point source discharges to the Niagara River. A draft Remedial Action Plan for Ontario sources was submitted to the IJC in 1985. The final Remedial Action Plan for Ontario sources should be completed by May 1990. The Niagara River Toxics Management Plan, which is being prepared by four agencies, will identify actions for toxics management including long-term monitoring, point and non-point source control programs and procedures for exchange and release of information.					
2GA Upper Grand River	Ag-1 STP-1 In-1-2 L-2	4, 2, 6 4, 10, 1 9, 17, 4, 2 15	b, e, c a, b h, k, g, e k	5, 2, 3 5, 2 2, 5 1	c b, d b, c, d b, d

WATERSHED NAME (NUMBER)	MAIN POLLUTION SOURCES	MAIN PROBLEM PARAMETERS	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF ENVIRONMENTAL PROTECTION EFFORTS
2GA (continued)					
Comments: - Agricultural land drainage in the upper basin contributes nutrients and bacteria to water courses. Present controls are inadequate. Beaches are in jeopardy of being posted. - Heavy STP loadings (Guelph, Waterloo, Kitchener) contribute to plant and algae growth. STP discharges may also result in un-ionized ammonia criteria not being met. The Grand River Implementation Committee study addressed these problems. - Discharges from the Uniroyal chemical plants in Elmira have caused fish kills. Past waste disposal practices have caused groundwater contamination. Discharges to surface and groundwater could potentially contaminate existing and limit future water supplies in Elmira, Kitchener-Waterloo and Brantford. A study is in progress to assess the impacts of Uniroyal activities on surface and groundwater quality. A MISA pilot project has been initiated to investigate the impact of hazardous contaminants from Waterloo STP, urban runoff and industrial/landfill leachate in order to protect water supplies. - Petroleum wastes which previously infiltrated soils at the Breslube site have the potential for contaminating surface and groundwater. - A fish farming operation has resulted in water quality degradation in a downstream pond. Treatment requirements have yet to be developed. - The Region of Waterloo Waste Management Study is evaluating locations for new landfill sites. Some existing sites are potentially contaminating local aquifers. - Waterloo Region has proposed to extract water from Grand River and recharge an aquifer as municipal supply.				
2GB Lower Grand River	Ag-1 R-2	2 15	e k	2 2	a, c b, d
Comments: - Upstream agricultural inputs have increased turbidity levels in the Lower Grand River. - The stream is slow moving and has limited plant growth because of turbidity. No major problems are noted.					

WATERSHED NAME (NUMBER)	MAIN POLLUTION SOURCES	MAIN PROBLEM PARAMETERS	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF ENVIRONMENTAL PROTECTION EFFORTS
2HH					
Kawartha Lakes Drainage	Ag-1	4, 9	b, i, e	5	-
	STP-1	4, 9	b, i, e	5	-
	Pr-2	4, 6	c, k	1	d
	R-2	15	k	1, 2	d
	L-1-2	15, 9, 3, 19	d, b	1, 2	-

Comments: - MOE is proposing water quality management studies for 11 different areas within the Kawartha Lakes.

- Private sewage systems and road salting caused extensive contamination of shallow wells in Bridgenorth (Township of Smith). Individual well replacement under a Ministry grant program has commenced and is expected to be completed by the end of 1986.
The old and new Peterborough landfill sites have caused local degradation of water resources. Studies are under way to develop corrective measures.

- MOE has initiated comprehensive biological and nutrient budget studies of Sturgeon and Rice Lakes to provide a sound technical basis for water quality management decisions.

2HJ					
Otonabee River-Rice Lake	STP-1	4, 9	b, i, e	5	a
	Ur-1	4, 9	b, i, e	5	b

Comments: - Peterborough industries are contributing to PCB contamination of the Otonabee River and Rice Lake. Studies to identify specific sources and viable abatement action are under way.

- Peterborough Area Beach Pollution Studies are under way along Otonabee River within the City of Peterborough and along Indian River beaches. The studies will make recommendations on abatement options to improve quality of the rivers for swimming use.

CENTRAL REGION (continued)

WATERSHED NAME (NUMBER)	MAIN POLLUTION SOURCES	MAIN PROBLEM PARAMETERS	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF ENVIRONMENTAL PROTECTION EFFORTS
2HG					
Scugog River	STP-1	4, 1, 6, 10	b, a, e	5, 3	b
	Ag-1	2, 4	j	2	b, c
	Pr-2	4, 6	c, k	1	d
	R-2	15	k	1, 2	d

Comments:
- A poorly developed agricultural drainage channel has caused high turbidity downstream at the Lindsay water filtration plant. Reparation and stablization work of the drains are under way.
- Road salting caused extensive contamination of shallow wells in Manchester (Township of Scugog). All replacement wells have been installed under a Ministry grant program. Iron treatment is being considered for the new replacement wells.
- Private sewage systems and road salting have caused extensive contamination of shallow wells in Greenbank (Township of Scugog). A study has been initiated to implement a water well replacement program.

2HF					
Cameron Lake	STP-1	4	b	2	b
Drainage	Pr-1	4	b	-	a
	R-2	15, 18, 6	k	1, 2	b, d
	L-2	15, 9, 3, 19	d, b	1, 2	-

Comments:
- The northern portion of this watershed is largely undeveloped.
- Operational problems at the STPs in Haliburton and at Leslie M. Frost Centre should be rectified although adverse effects of the effluent discharges are not significant.
- Private sewage systems and road salting have caused extensive contamination of shallow wells in Coboconk (Township of Bexley and Somerville). A study has been initiated to implement a water well supply project.
- Detailed studies are in progress to assess potential groundwater contamination near the Ennismore Township landfill site.

CENTRAL REGION (continued)

WATERSHED NAME (NUMBER)	MAIN POLLUTION SOURCES	MAIN PROBLEM PARAMETERS	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF ENVIRONMENTAL PROTECTION EFFORTS
2HD					
1. Lake Ontario Tributaries and waterfront (from Pickering to Colborne)	STP-1 O-1 (stream rechanneli-zation)	4, 6, 10, 11	b, c, h	5, 3, 1	b, d
	Ur-1	2, 9, 4	i, e	5	a
	Pr-2	4, 6	c, k	1	d
	R-2	15	k	1, 2	d
Comments: -	Two of four STPs discharging into creeks in the area cause adverse water quality conditions. A new facility is in service for Village of Colborne. Corrective actions are being discussed for Cobourg Creek.				
-	An Environmental Assessment was undertaken for rechannelization of the Ganaraska River for flood control purposes to handle storm water discharges to the river. Environmental concerns relate to channel configuration, the need for the project, and problems during construction. Construction in accordance with the mitigative measures identified in the EA is under way.				
-	Private sewage systems and road salting have caused extensive contamination of shallow private wells in Newtonville. A study has been initiated to implement a well water supply replacement project. Test drilling has been carried out near Orono to determine availability and quality of groundwater to replace existing municipal wells affected by road salting.				
-	The Cobourg landfill site has caused degradation of local water resources. Studies are in progress to identify satisfactory abatement measures.				
2. Lake Ontario: Port Hope	In-1	8, 5, 9 (PCBs)	i j, 1 (sediment)	5, 2 or 1 (not proven)	a

WATERSHED NAME (NUMBER)	MAIN POLLUTION SOURCES	MAIN PROBLEM PARAMETERS	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF ENVIRONMENTAL PROTECTION EFFORTS
2HD 2. Port Hope (continued)					
Comments: - Drinking water quality at the Port Hope WTP is not presently impaired by industrial discharges although occasional raffinate spills by Eldorado Nuclear have led to elevated levels of radionuclides (Ra 226) which are confined to the Port Hope harbour turning basin. No further spills are expected as the plant has relocated. Sediments of the turning basin are contaminated with radionuclides, metals and PCBs, thus precluding unrestricted dredged spoils disposal. - Source(s) of PCBs are under investigation and abatement is probably required. - Expansion of uranium hexafluoride production capacity by Eldorado Nuclear is completed. Potential impacts (largely thermal) on local fishery were investigated. Follow-up monitoring will test prediction of no significant thermal impacts, once the plant is operational. - Atomic Energy Canada Limited has announced that all low level radioactive waste in the Port Hope area will be moved onto safe storage sites. Studies will be undertaken to examine options for removal of the contaminated sediments.					
2HC 1. Lake Ontario Tributaries and waterfront (from Etobicoke to Pickering)	Ur-1 STP-1 Pr-2 R-2 L-2	2, 6, 4 4, 10, 11 4, 6 15 15, 14, 13, 9, 3, 19	g, c, b b, c, h c, k k k	5, 3, 1 5, 3, 1 1 1, 2 1, 2	b, c b, c d d b, d
Comments: - A large portion of this area is urbanized and streams such as the Humber and Don Rivers receive flows from storm and combined sewers. It is suspected that these flows are responsible for the deteriorated water quality in the basin including the lakefront areas.					

CENTRAL REGION (continued)

WATERSHED NAME (NUMBER)		MAIN POLLUTION SOURCES	MAIN PROBLEM PARAMETERS	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF ENVIRONMENTAL PROTECTION EFFORTS
2HC						
1.	Lake Ontario (continued)					
	- The number of STPs discharging to streams has decreased because of the construction of the York-Durham Sewage System.					
	- Agriculture has the potential to adversely affect water quality in the area. However, during the last few years, water quality problems have not been attributed to this activity.					
	- Private sewage systems and road salting have caused extensive contamination of shallow private wells in Claremont. A study has been initiated to implement a well water supply replacement project in this community.					
	- The Humber River, Don River and Mimico Creek basins are included in the Toronto Area Water Management Study which is intended to assess existing water quality problems and recommend and implement corrective measures. This 5-year MOE study will result in a comprehensive water management plan for the area.					
	- The old Town of Vaughan landfill site has caused an extensive contaminated plume. The Metro Toronto Keele Valley landfill site abatement program is designed to ensure that water resources are adequately protected.					
2.	Lake Ontario Toronto Waterfront	Ur-1	9, 6, 4, 2, 5, 17	i, c, b, e, h	5, 3, 9	d, c
		STP-1	6, 5, 9, 17	c, e, h	3, 9	d
		O-1 (lakefilling)	2, 4, 5, 9, 17	e, h	9	d
		D-1	2	e, h	9	a
		L-2	15,14,13,9,3,19	k	1, 2	d, b
		At-1	5, 9, 17	h		

WATERSHED NAME (NUMBER)	MAIN POLLUTION SOURCES	MAIN PROBLEM PARAMETERS	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF ENVIRONMENTAL PROTECTION EFFORTS

2HC

2. Lake Ontario - Toronto Waterfront (continued)

Comments:
- Ongoing sewer separation program should further reduce bacterial and other contaminant loadings. A special 5-year MOE study is under way (TAWMS - Toronto Area Watersheds Management Study) to develop a comprehensive water management plan for the three watersheds entering the Toronto Waterfront.
- MOE is assisting municipalities in assessing sources of bacterial contamination in developing abatement measures.
- Extension of the Main and Humber STP outfalls is under review by Metro.
- At the mouth of the Humber River a revetment has been built to deflect the river flow from the protected water behind the breakwall. As a result, bacterial water quality of the western beach areas has partially improved.
- Lakefilling at the Leslie St. Spit is an issue of high public interest and attention. Short and long term effects are under study by MOE. Results to date indicate that effects are localized and do not impact on water supplies. A proposal by the Toronto Harbour Commission to provide a 1,200 berth marina in the Outer Harbour is being reviewed under the Federal Environmental Assessment Review Process.
- Dredging and dredged spoils disposal effects have been studied by MOE/DOE. Results indicate that water quality impacts are localized. MTRCA has completed an Environmental Assessment on effects of siltation at the mouth of the Don River. The EA recommends the dredging of the Keating Channel. A decision is pending.
- A draft Remedial Action Plan for the Toronto Waterfront Area of Concern is being prepared by the federal-provincial work team in cooperation with the City of Toronto and is scheduled for completion by July 1988.

2HB					
Lake Ontario Tributaries (from Burlington-Etobicoke)	STP-1	4, 10, 11	b, c, h	5, 3	b
	Pr-2	6, 18	c, k	1	b
	Ag-2	18	k	1	b
	In-1	1, 2, 4, 13	-	-	b
	L-2	15, 9, 3, 19	k	1, 2	-

CENTRAL REGION (continued)

WATERSHED NAME (NUMBER)	MAIN POLLUTION SOURCES	MAIN PROBLEM PARAMETERS	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF ENVIRONMENTAL PROTECTION EFFORTS
2HB (continued)					
Comments: - Several water quality surveys indicate that water quality is being degraded by STP effluents to the extent that provincial water quality guidelines at times are exceeded. Potential for further degradation exists. Grants for expansion of plants are being sought by the concerned municipalities.					
- Storm water runoff and agricultural inputs could potentially damage the basin water quality, but do not appear to be doing so at present.					
- Private sewage systems have caused extensive contamination of shallow wells in Alton. A study has been initiated to implement a well water supply replacement project.					
- A turkey farm operation in Mono Mills has caused a nitrate pollution problem in the local municipal ground water supply. The Region of Peel has had to develop additional water supply to meet the water requirements of the community.					
- BOD contamination from Ford-Oakville is localized and rapidly diluted by the lake water.					
- Studies are in progress to determine potential and actual effects on groundwater from abandoned landfill sites in Burlington.					
2ED					
1. Nottawasaga River and 13 Other Tributaries	STP-1 L-2	6, 10, 11 15, 9, 3, 19	b, c, h k	1, 3 1, 2	b, c d, b
Comments: - Water quality surveys indicate that streams are being degraded by sewage treatment facility discharges. Corrective action has been recommended.					
- Agricultural and recreational activities have the potential to adversely affect water quality.					
- Landfill sites at Vespra, Wasaga Beach, Tecumseh and Stayner have caused off-site leachate impact on local water resources. Studies are in progress to monitor impacts.					

WATERSHED NAME (NUMBER)	MAIN POLLUTION SOURCES	MAIN PROBLEM PARAMETERS	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF ENVIRONMENTAL PROTECTION EFFORTS
2ED					
1. Nottawasaga River (continued)					
- Honda Auto Plant planned for Alliston will increase sewage discharge loadings to the Boyne River. The fieldwork for an assimilation study for an expanded STP has been completed.					
- A proposal for discharges of effluents from a STP for Nottawasaga Inn to the Nottawasaga River has been reviewed by the Ministry and a C. of A. has been issued.					
2. Collingwood Harbour	Ur-2	5, 19 (PCBs)	g. h	4, 5	b
	In-1	5, 19 (PCBs)	g, h	4, 5	b
	STP-1	4	b	4, 5	b, d
Comments: - The expansion of the Collingwood STP to include secondary treatment and phosphorus removal was completed in 1982. The reduction in phosphorus levels below 1 mg/L will improve the water quality conditions in the harbour by reducing aquatic growth.					
- As part of the Collingwood Harbour Study, enhanced monitoring of a tributary to the harbour was underway in 1986. Results from the field work will be included in the Draft Remedial Action Plan for the Collingwood Area of Concern to be completed by May 1988.					
3. Penetang Bay - Sturgeon Bay	STP-1	4, 6	b, c	5	b, d
Comments: - A decrease in phosphorus loading to the area from Penetang Bay to Sturgeon Bay has occurred since 1974. However, monitoring shows limited response to water quality from reduced phosphorus loadings and eutrophication potential still remains. Studies are in progress to better understand the limited response to nutrient control. The expansion of the Midland STP has been completed. The new sewage treatment facility at Victoria Harbour is now operational. A new STP for Penetanguishene is under construction.					

WATERSHED NAME (NUMBER)	MAIN POLLUTION SOURCES	MAIN PROBLEM PARAMETERS	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF ENVIRONMENTAL PROTECTION EFFORTS
2EC					
Lake Simcoe Basin-	Ag-1	4	a, b	5	c
Severn River	Ur-1	4	a, b	5	c
	STP-1	4	a, b	5	c
	Pr-2	4, 6	c, b	1	d
	R-2	15	k	1, 2	d
	L-2	15, 9, 3, 19	k	1, 2	d, b

Comments: - Under the Lake Simcoe Environmental Management Strategy a number of programs are being carried out. A comprehensive monitoring and study program to determine phosphorus loadings to Lake Simcoe has been completed. Potential non-point source abatement measures have identified.

- The monitoring program being conducted on Lake Simcoe by the South Lake Simcoe Conservation Authority and MOE, has established background nutrient levels against which future abatement measures will be measured. These measures were recommended by CCRD and adopted by MOE for reducing phosphorus loadings from STPs and agricultural drainage from the Holland Marsh into the Holland River.
- As the result of a 1979 CCRD directive, the sewage discharges from Aurora and Newmarket were re-directed to the York-Durham Sewage Treatment System in June 1984, for treatment at the Duffin Creek STP. This will reduce phosphorus loadings to the East Holland River and to Cook Bay in Lake Simcoe.
- Private sewage systems and road salting have caused extensive contamination of shallow wells in communities along the western shore of Lake Simcoe in the Township of Innisfil and in Ballantrae in the Town of Whitchurch-Stouffville. Studies have been initiated to implement well water supply replacement projects in these communities.
- WMI Canada, Landfill Site #1 (Town of Aurora) has caused an extensive contaminant plume off-site. The extension of municipal water supply is in progress to supply water to the affected well owners.
- The City of Orillia landfill site has degraded local water resources. A study is under way to assess problems and potential remedial actions.

CENTRAL REGION (continued)

WATERSHED NAME (NUMBER)	MAIN POLLUTION SOURCES	MAIN PROBLEM PARAMETERS	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF ENVIRONMENTAL PROTECTION EFFORTS
2EB					
Moon River and	STP-1	4	b	-	a
Gohome River	Pr-1	4	b	-	a
	In-1	1, 2, 4	b	-	a
	L-2-1	9, 5	k, e	1	b, d

Comments: - This watershed is not highly developed although many lakes are heavily used by seasonal cottagers.

- Most discharges to surface waters are from sewage treatment facilities. Presently, the STPs operate satisfactorily, but eutrophication is still a problem in Gravenhurst Bay due to high phosphorus discharges prior to 1971.
- A Bracebridge landfill site is causing groundwater contamination problems and a Gravenhurst landfill site is causing surface water quality problems.
- A Muskoka Lakes landfill site (closed) is causing minor surface water problems. Research by the University of Guelph is under way to examine spray irrigation of leachates as a means of leachate treatment.

WATERSHED NAME (NUMBER)	MAIN POLLUTION SOURCES	MAIN PROBLEM PARAMETERS	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF ENVIRONMENTAL PROTECTION EFFORTS
2MC					
Lower	In-1	5, 6, 9, 13	i, c, b	5, 3, 4	b, c, d
St. Lawrence River	Trans-1	19 (PCBs)	i	5	b, d
(Cornwall-Massena)	Ur-1	6	c	3	b, d
	STP-1	6	c	3	b, d

Comments: - Fish, sediment and water contaminated with PCBs, phenols and mercury have been noted downstream of Cornwall/Massena area (Lake St. Francis, Quebec). Sources include Domtar, CIL and Courtaulds in Cornwall, and Alcoa and G.M. in Massena (N.Y.).

- Massena sources of PCB contamination are under investigation and abatement measures proposed for inclusion in upcoming SPDES permit renewals.
- Bacterial contamination problems result from Domtar discharges and from sewage by-passing the Cornwall STP.
- Cornwall phenol and bacterial problems violate water quality objectives, necessitating policy review for pulp and paper related phenol wastes and Klebsiella bacteria.
- St. Lawrence River at Cornwall has been selected as a MISA Pilot Study site. The MISA study commenced in the spring of 1986.
- A draft Remedial Action Plan for the St. Lawrence River - Cornwall IJC Area of Concern is scheduled for completion by March, 1988.
- A Water Resources Branch study of Courtauld's discharges was undertaken during 1985. Effluent requirements have been set and will be included in the Certificate of Approval which is under review.

2MB					
West St. Lawrence River	In-1	10	h, i	5	d

Comments: - The planned abatement program at Nitrochem in Maitland to reduce ammonia discharges to the river has been delayed.

WATERSHED NAME (NUMBER)	MAIN POLLUTION SOURCES	MAIN PROBLEM PARAMETERS	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF ENVIRONMENTAL PROTECTION EFFORTS
2MB (continued)					
Comments: -	Elevated levels of alkyl lead have been detected in some fish immediately downstream of the Dupont tetraethyl lead plant at Maitland. The plant is in the process of closing permanently, and a rapid reduction in lead levels is anticipated. Fish collections are scheduled for fall 1986.				
2MA					
Western St. Lawrence Tributaries	Ur-1	6, 4	c, b	3, 5	d
	Ag-1	4, 6, 2	c, b	3, 5	b
	L-1	5, 1, 10	h, g	5	b
	STP-1	1, 4, 6	c, b	3, 5	d
Comments: -	In general, water quality is good in the Western St. Lawrence River tributaries.				
-	Sewer separation programs are in progress in Kingston and Brockville to reduce storm sewer overflows.				
-	Agricultural activities, ie. cattle watering, manure and erosion, have minor impacts on water quality.				
-	An abatement program to correct leaching problems from Brockville landfill site is being studied.				
-	Hydraulic upgrading is needed at Gananoque sewage treatment lagoons.				
2LB					
Lower Ottawa River	Ag-1	2, 4, 6	b, c, g	2, 3, 4, 5	b, c
	STP-1	1, 4, 6	a, b, d	3, 6	b
	Irans-1	1, 4, 6	a, b, c	3, 5	b
	Pr-2	6	c, k	1	d

SOUTHEASTERN REGION (continued)

WATERSHED NAME (NUMBER)	MAIN POLLUTION SOURCES	MAIN PROBLEM PARAMETERS	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF ENVIRONMENTAL PROTECTION EFFORTS
2LB (continued)					
Comments: -	The Ottawa River Water Quality Coordinating Committee Report is scheduled for release during 1986.				
-	Agricultural controls are required to reduce manure, cattle watering and erosion problems in a South Nation River tributary.				
-	STPs on the Ontario side of the river have adequate treatment but raw sewage is being discharged from the Quebec side of Ottawa River. Treatment measures are planned at Outouais.				
-	Private services correction programs are in progress to correct water supply contamination problems at several communities.				
-	A comprehensive water quality survey of Ottawa River is being carried out by the Region during 1986.				
-	A major abatement program has been initiated by Ault Foods at Winchester which will bring discharges into compliance with Blue Book requirements.				
2LA					
Rideau River	Ur-1	6, 4	c	3	b, d
	STP-1	1, 4	b, a	5	d
Comments: -	Agricultural problems associated with bacterial and nutrient contamination require attention throughout the watershed.				
-	Urban runoff is affecting beaches in Ottawa. A recently completed stormwater management study recommends an urban runoff control strategy, and awaits action by Regional Municipality of Ottawa-Carleton.				
-	Localized STP problems exist in Kemptville and Smiths Falls. A consultant is studying deficiencies in Smiths Falls' sewage collection and waste treatment system. An Environmental Assessment for expansion of Kemptville STP is being prepared.				
-	Coal tar has been discharged to and deposited in Rideau River at Ottawa. Clean-up of river sediments is planned during 1986.				

SOUTHEASTERN REGION (continued)

WATERSHED NAME (NUMBER)	MAIN POLLUTION SOURCES	MAIN PROBLEM PARAMETERS	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF ENVIRONMENTAL PROTECTION EFFORTS
2KF					
Mississippi River-Lac Deschenes	Ag-1	2, 4, 6	c, b	3	b
	At-1	7	d	5	b, c
Comments: -	Water quality is mostly excellent in the watershed.				
-	Localized sewage bypassing problems at Almonte and Carleton Place have been eliminated for normal summer storm events.				
-	Localized manure and cattle watering problems require attention.				
-	Some lakes are sensitive to acid precipitation. International efforts are required.				
2KE					
Lower Madawaska River	STP-1	6	c	3	b
Comments: -	Most of the watershed has excellent water quality.				
-	Sewage bypassing at Arnprior has resulted in bacterial contamination at the river mouth and may require additional abatement measures.				
2KC					
Allumette Lake-Lac Des Chats-	Ag-1	4	b	2, 5	b, c
	O (road oiling)-1	19 (PCBs)	i	3, 5	a
Ottawa River	STP-1	4, 1	b	5	d
Comments: -	Most of the watershed has excellent water quality.				
-	The Ottawa River Water Quality Coordinating Committee Report is scheduled for release in 1986.				

SOUTHEASTERN REGION (continued)

WATERSHED NAME (NUMBER)	MAIN POLLUTION SOURCES	MAIN PROBLEM PARAMETERS	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF ENVIRONMENTAL PROTECTION EFFORTS
2KC (continued)					
Comments: - Agricultural nutrient sources significantly contribute to eutrophication problems in Muskrat Lake. - The PCB clean-up of Clear Lake has been completed. - The Pembroke STP has been upgraded and expanded. - A proposed methanol plant at Renfrew may potentially cause water quality problems in Bonnechere River. - Phosphorus removal facilities will be incorporated at the Eganville STP. - A comprehensive water quality survey of Ottawa River is being carried out by the Region during 1986.					
2KB Petawawa River	Good water quality in the watershed. No discharges of environmental significance.				
2KA Holden Lake- Ottawa River	At-1 In-1 Trans-1	7 1 1	d, g a a	5 5 5	b b, c b, c
Comments: - The Ottawa River Water Quality Coordinating committee Report is scheduled for release in 1986. - Most of the watershed has good water quality but some lakes are sensitive to acid precipitation. There are heavy metal problems unrelated to known waste inputs. - Low dissolved oxygen problems in Ottawa River are caused by pulp and paper discharges from Quebec. - A comprehensive water quality survey of Ottawa River is being carried out by the Region during 1986.					

SOUTHEASTERN REGION (continued)

WATERSHED NAME (NUMBER)	MAIN POLLUTION SOURCES	MAIN PROBLEM PARAMETERS	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF ENVIRONMENTAL PROTECTION EFFORTS
2HM					
1. Eastern Lake Ontario-Upper St.Lawrence River	STP-1	4, 6	b, c	5	b, c
	Ag-1	4, 6	b, c	5	b, c
	In-1	9	i	5	b, c
	L-1	9	i	5	b, c
	Trans-1	9	i	5	b, c
	Ur-1	6	c	3	b, c
Comments: -	Eutrophication and fish contamination problems are mainly attributable to industrial and landfill discharges of organics in eastern Lake Erie and western Lake Ontario.				
-	Implementation of IJC nutrient control strategy and New York State control over industrial and landfill discharges to the Niagara River are necessary in order to improve eastern Lake Ontario water quality.				
-	Kingston area beaches are affected by urban runoff. A bacteriological study was completed in 1985 and abatement strategies are presently being developed.				
2. 6 Eastern Lake Ontario Tributaries	Ur-1	6, 4	c, b	3, 5	c, d
	Ag-1	4, 6, 2	c, b	5, 3	b, c
	In-1	1	a	5	a, b
	STP-1	4, 1	b, a	5	a
	L-1	15, 9, 5	e	-	a
Comments: -	Cattle watering, manure runoff, erosion and other problems associated with agricultural activities have the greatest impact on surface water quality. Control measures are required.				
-	MOE has undertaken a bacteriological study to determine need for abatement of problems related to storm and combined sewer discharges to the Cataraqui River.				

SOUTHEASTERN REGION (continued)

WATERSHED NAME (NUMBER)	MAIN POLLUTION SOURCES	MAIN PROBLEM PARAMETERS	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF ENVIRONMENTAL PROTECTION EFFORTS
2HM 2. 6 Eastern Lake Ontario Tributaries (continued)					
Comments: - The Napanee River STP has been expanded and upgraded, but phosphorus levels in discharges remain in excess of requirements. Further abatement measures are planned, and compliance is expected by 1986. - The Violet landfill site is having minor impacts on Wilton Creek, as indicated by elevated chlorides. Potential impacts of proposed site expansion are being assessed by consultants. - Contamination of Wilton Creek with organic wastes from Harrowsmith Cheese requires abatement. The problem is being examined by a consultant. Decisions concerning abatement will be made during 1986.					
2HL Moira River	Ag-1 Ur-1	4, 6, 2 6	c, b c	4, 5 3	b, c d
Comments: - Water quality is generally good but there is arsenic contamination below Deloro. An abatement program has substantially reduced arsenic loadings to the river. - Water quality problems associated with agricultural activities, ie. cattle watering, erosion, and manure runoff, are of minor significance. - Sewer bypassing problems at Belleville were corrected during 1983. Bacteria contamination is caused by storm sewers and from the Corbyville Distillers.					

SOUTHEASTERN REGION (continued)

WATERSHED NAME (NUMBER)	MAIN POLLUTION SOURCES	MAIN PROBLEM PARAMETERS	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF ENVIRONMENTAL PROTECTION EFFORTS
2HK					
Trent River-	In-1	6, 13, 9, 2	c, i	3	a, b, d
Crowe River	Ag-1	4, 2, 6	b, c	3, 5	b
	Mi-1	8	i	3, 5	d

Comments: -
- Madawaska Mines have closed and radiological contamination is not significant. Radiological objectives are not met at the abandoned mine tailings at Farrel Lake. A biological survey of the tailings was completed during 1983-84 and the findings will be evaluated.
- A suspended solids reduction program for Trent Valley Paper was completed during 1983-84. Bacteriological contamination problem in the mouth of the Trent River is believed to be attributable to Domtar discharges. Domtar was investigating potential in-plant sources and abatement strategies during 1985.
- Manure runoff, erosion and cattle watering are causing localized water quality problems.
- Domtar Preserving has installed an activated carbon treatment system to control discharges of pentachlorophenols. Non-compliance with C. of A. requirements have continued and further abatement is required.
- A water quality survey of Cold Creek initiated by the Region during 1986 may define a need for abatement of agricultural sources of contamination.

WATERSHED NAME (NUMBER)	MAIN POLLUTION SOURCES	MAIN PROBLEM PARAMETERS	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF ENVIRONMENTAL PROTECTION EFFORTS
2HE					
1. Prince Edward	Ag-1	4, 6, 2	b, c, g	5, 3	b, c
County Streams	In-1	4, 1	b	5	b

Comments: -
- Most streams are turbid, nutrient enriched, and contaminated with bacteria as a result of manure runoff, erosion and cattle watering. Control measures are required.
- Major water quality assessment of nutrient enrichment status and sources affecting West Lake was initiated during 1985 and continues in 1986. Preliminary interpretation of data suggests that Hardee Canning wastewater is major source affecting West Lake water quality. Agricultural inputs may also be significant.

SOUTHEASTERN REGION (continued)

WATERSHED NAME (NUMBER)	MAIN POLLUTION SOURCES	MAIN PROBLEM PARAMETERS	ENVIRONMENTAL EFFECTS	MAIN IMPACTS	STATUS OF ENVIRONMENTAL PROTECTION EFFORTS
2HE					
1. Prince Edward County Streams (continued)					
Comments: - Hardee Canning at Bloomfield also causes contamination of Bloomfield Creek. A consultant is currently evaluating abatement options.					
2. Lake Ontario-Bay of Quinte	STP-1	4, 6	a, b, c, e	2, 4, 3	b, c, d
	Ag-1	4	a, b, e	2, 4	b, c
	Ur-1	6, 4	c	3	b, c
	In-1	13, 9	i	5	a
Comments: - Water quality improved from 1978 to 1981 following installation of phosphorus controls at municipal STPs. However, indications from 1982 to 1985 are that phytoplankton densities are increasing to levels approaching pre-phosphorus control years. A monitoring program commenced in 1985.					
- The Bay of Quinte has been identified as an IJC Area of Concern.					
- Project Quinte findings dealing with 10 years of multi-agency studies have now been published.					
- A draft Remedial Action Plan for the Quinte Area of Concern is scheduled for completion by February 1988.					

SURFACE AND GROUNDWATER QUALITY EVALUATION SUMMARY

The chart below summarizes the number and percentage of 144 tertiary watersheds in the Province affected by different pollution sources. Individual watersheds may be affected by more than one pollution source.

	1983-84	1984-85	1985-86 Planned	1985-86 Actual
No. of watersheds affected by agricultural runoff:				
. Surface Water	34 (24%)	32 (22%)	34 (24%)	34 (24%)
. Groundwater	13 (9%)	13 (9%)	13 (9%)	14 (10%)
No. of watersheds affected by direct industrial discharges:				
. Surface Water	43 (30%)	36 (25%)	43 (30%)	39 (27%)
. Groundwater	2 (1%)	3 (2%)	2 (1%)	3 (2%)
No. of watersheds affected by urban runoff/stormwater discharges:				
. Surface Water	25 (17%)	22 (15%)	25 (17%)	24 (17%)
. Groundwater	0 (0%)	0 (0%)	0 (0%)	0 (0%)

	1983-84	1984-85	1985-86 Planned	1985-86 Actual
No. of watersheds affected by sewage treatment facility discharges:				
. Surface Water	46 (32%)	36 (25%)	46 (32%)	39 (27%)
. Groundwater	0 (0%)	0 (0%)	0 (0%)	0 (0%)
No. of watersheds affected by private sewage systems:				
. Surface Water	8 (6%)	6 (4%)	8 (6%)	6 (4%)
. Groundwater	22 (15%)	18 (13%)	22 (15%)	19 (13%)
No. of watersheds affected by atmospheric deposition:				
. Surface Water	13 (9%)	15 (10%)	13 (9%)	15 (10%)
. Groundwater	0 (0%)	0 (0%)	0 (0%)	0 (0%)
No. of watersheds affected by landfill site leachates:				
. Surface Water	4 (3%)	5 (3%)	4 (3%)	8 (5%)
. Groundwater	9 (6%)	15 (10%)	9 (6%)	20 (14%)

	1983-84	1984-85	1985-86 Planned	1985-86 Actual
No. of watersheds with water pollution problems caused by specific non-Ontario sources:				
. Surface Water	8 (6%)	6 (4%)	8 (6%)	6 (4%)
. Groundwater	0 (0%)	0 (0%)	0 (0%)	0 (0%)
No. of watersheds affected by storage facility leaks:				
. Surface Water	2 (1%)	1 (1%)	2 (1%)	0 (0%)
. Groundwater	8 (6%)	15 (10%)	8 (6%)	12 (8%)
No. of watersheds affected by road deicing application:				
. Surface Water	0 (0%)	0 (0%)	0 (0%)	0 (0%)
. Groundwater	9 (6%)	15 (10%)	9 (6%)	16 (10%)
No. of watersheds affected by mineral extraction:				
. Surface Water	8 (6%)	8 (6%)	8 (6%)	8 (6%)
. Groundwater	2 (1%)	0 (0%)	2 (1%)	0 (0%)

	1983-84	1984-85	1985-86 Planned	1985-86 Actual
No. of watersheds affected by water well drilling:				
. Surface Water	0 (0%)	0 (0%)	0 (0%)	0 (0%)
. Groundwater	1 (1%)	1 (1%)	1 (1%)	1 (1%)
No. of watersheds affected by dredging/dredged spoils disposal:				
. Surface Water	1 (1%)	3 (2%)	1 (1%)	3 (2%)
. Groundwater	0 (0%)	0 (0%)	0 (0%)	0 (0%)
No. of watersheds affected by other sources of pollution, namely stream rechannelization, lakefilling, logdrive, spills, and road oiling:				
. Surface Water	5 (3%)	5 (3%)	5 (3%)	5 (3%)
. Groundwater	1 (1%)	1 (1%)	1 (1%)	1 (1%)

APPENDIX H

SURFACE WATER QUALITY EVALUATION BY SECONDARY WATERSHED

The indicators identified in the following bar charts, and their respective Provincial Water Quality Objectives are:

DO	-	Dissolved Oxygen	-	Objective:	See Table, p.33, Water Management, M.O.E., 1978
TP	-	Total Phosphorus	-	Objective:	0.03 mg/L
FC	-	Fecal Coliforms	-	Objective:	100/100 mL
NH_3	-	Un-ionized Ammonia	-	Objective:	0.02 mg/L
FE	-	Iron	-	Objective:	0.3 mg/L
PHE	-	Phenols	-	Objective:	1 ug/L

For each indicator, six patterns are used to represent criteria exceedences:

represents 0% exceedence: the objective was not exceeded in any samples for the stated percentage of stations.

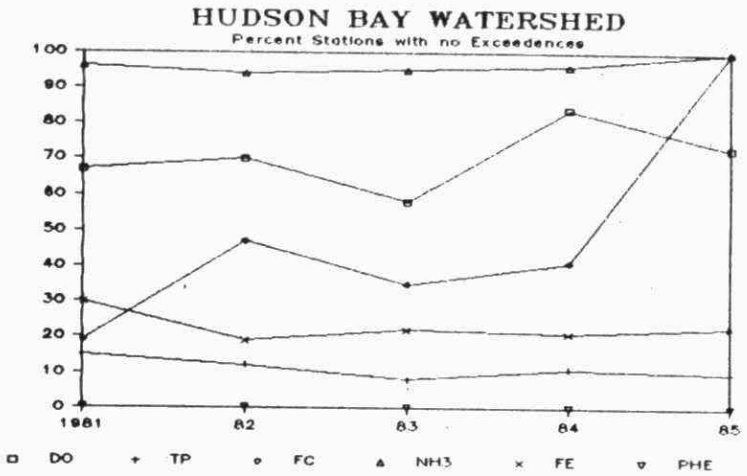
represents 1-24% exceedence: the objective was exceeded for 1% to 24% of the samples for the stated percentage of stations.

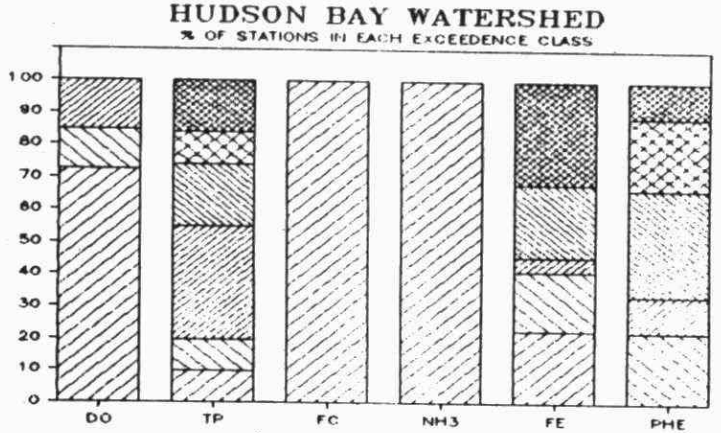
represents 25-49% exceedence: the objective was exceeded for 25% to 49% of the samples for the stated percentage of stations.

represents 50-74% exceedence: the objective was exceeded for 50% to 74% of the samples for the stated percentage of stations.

represents 75-99% exceedence: the objective was exceeded for 75% to 99% of the samples for the stated percentage of stations.

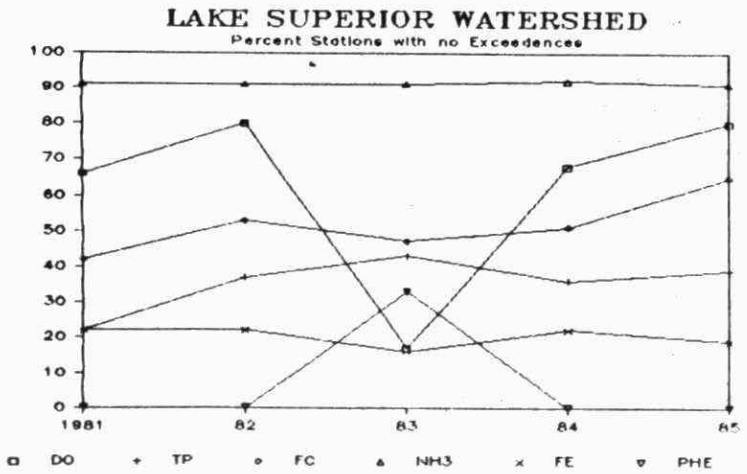
represents 100% exceedence: the objective was exceeded in all samples for the stated percentage of stations.

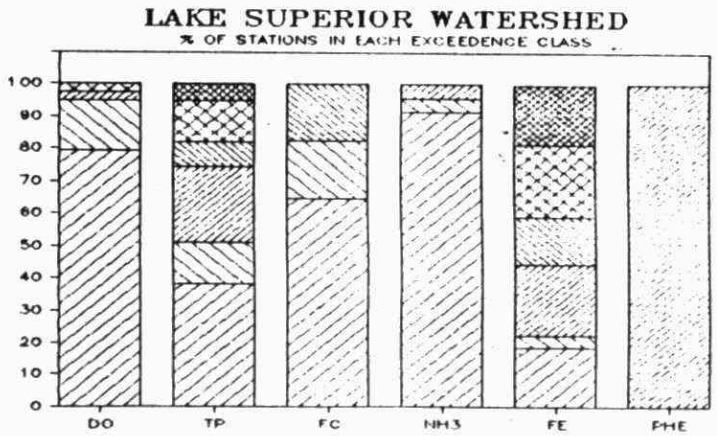




Historical Trends:

Stations with Improving Trends	0
Stations with No Trends	1
Stations with Deteriorating Trends	0





Historical Trends:

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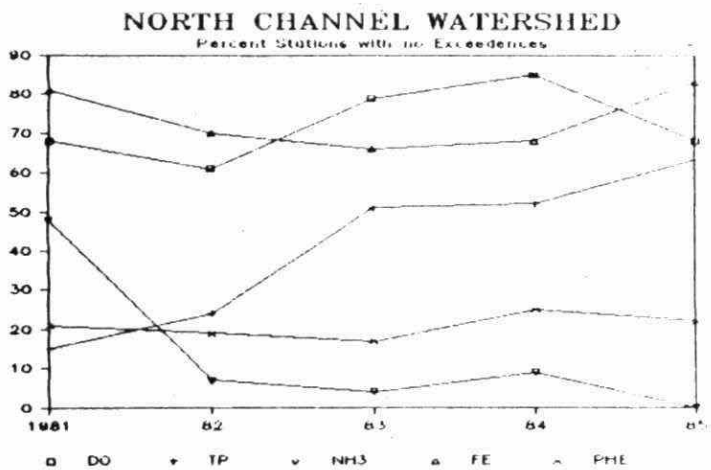
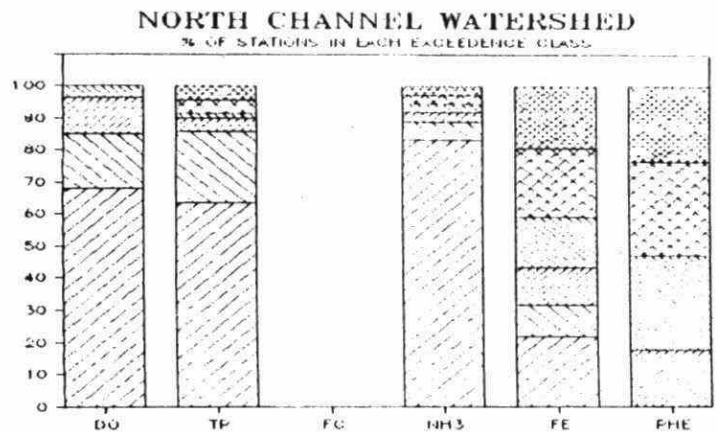
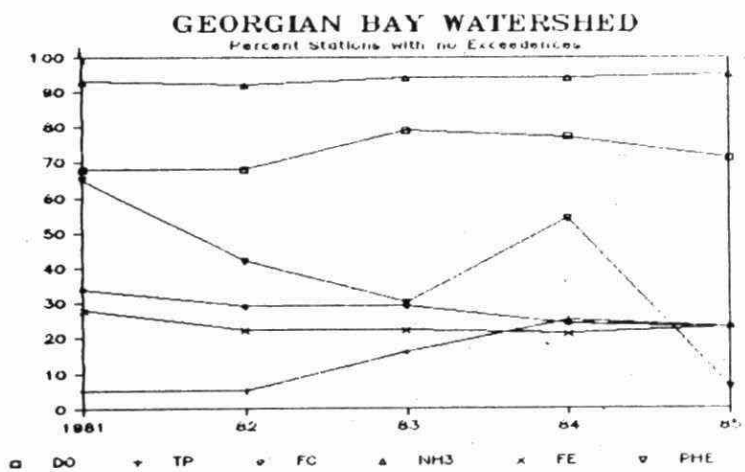
Stations with No Trends	1
Stations with Deteriorating Trends	0

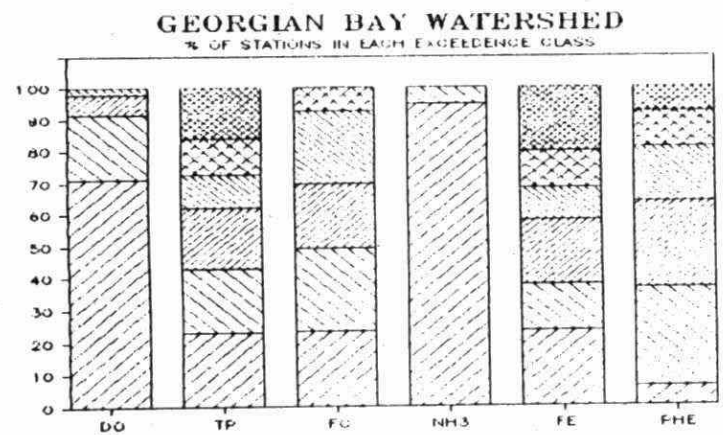




Historical Trends:

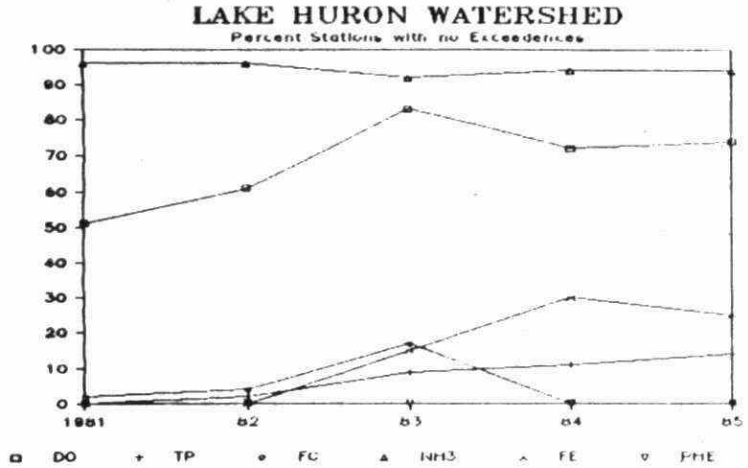
Stations with Improving Trends	0
Stations with No Trends	1
Stations with Deteriorating Trends	0

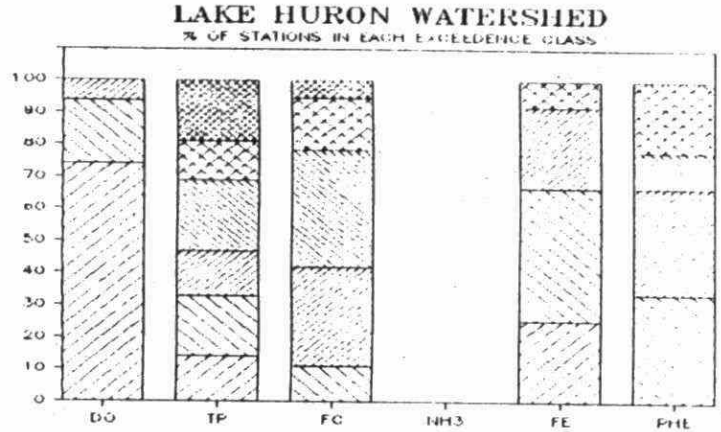




Historical Trends:

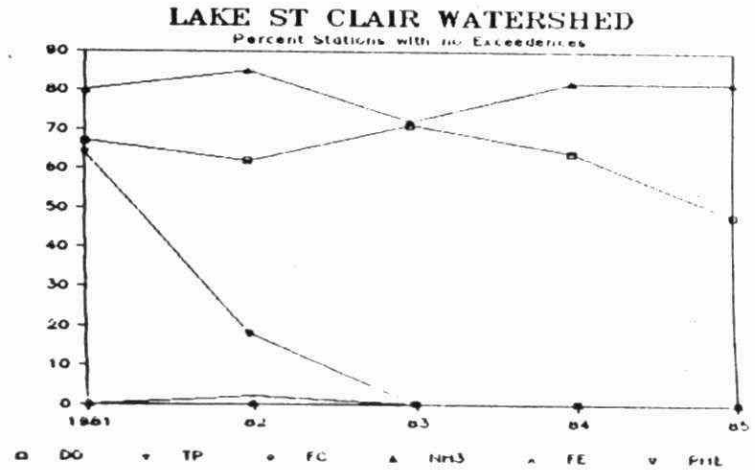
Stations with Improving Trends	6
Stations with No Trends	25
Stations with Deteriorating Trends	0

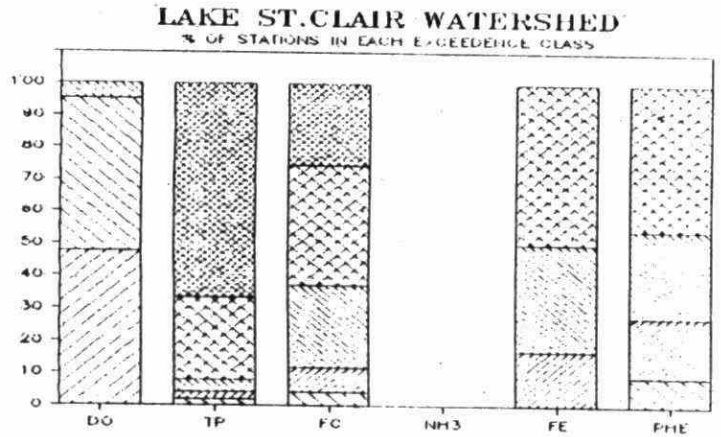




Historical Trends:

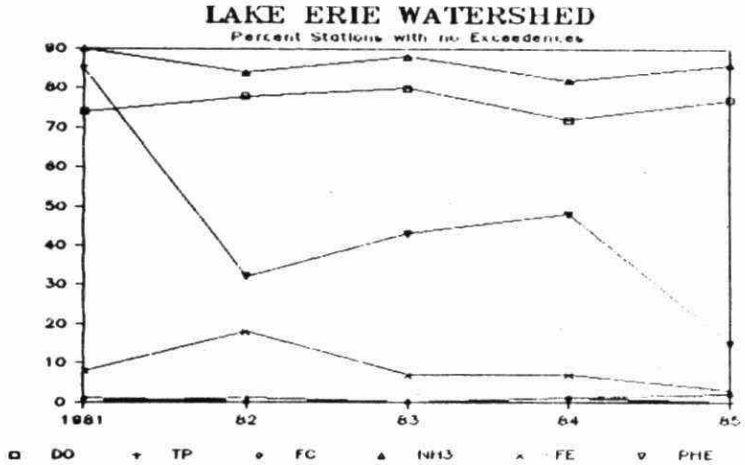
Stations with Improving Trends	6
Stations with No Trends	12
Stations with Deteriorating Trends	2

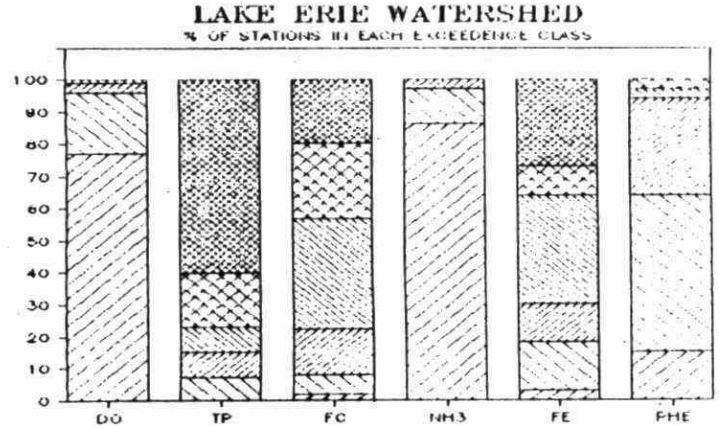




Historical Trends:

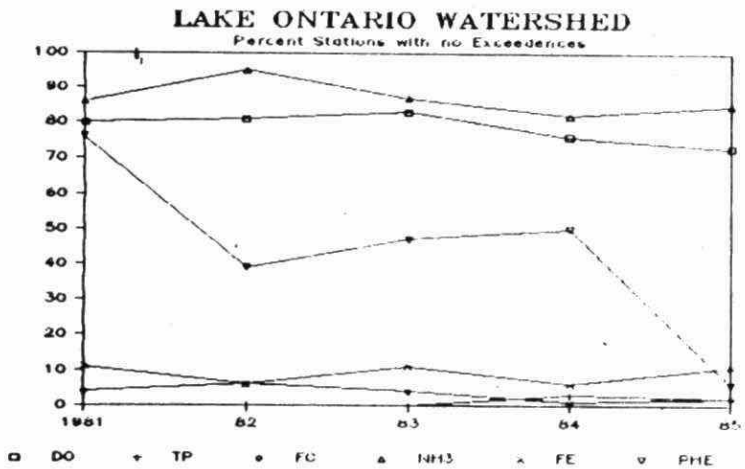
Stations with Improving Trends	1
Stations with No Trends	2
Stations with Deteriorating Trends	0

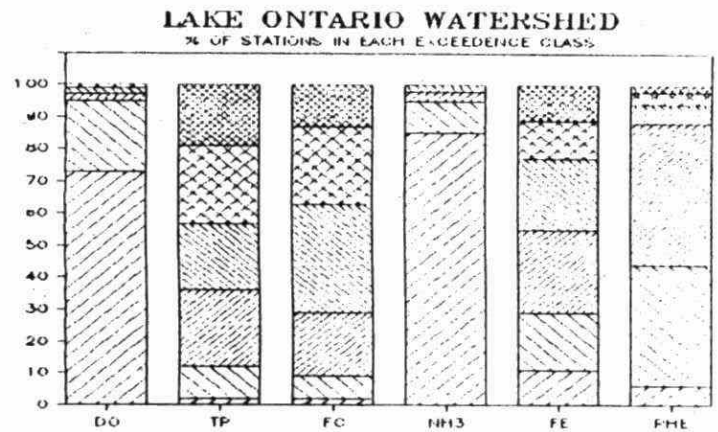




Historical Trends:

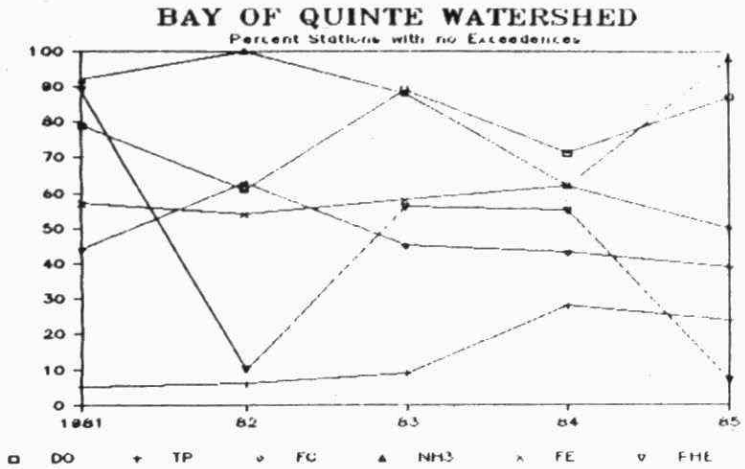
Stations with Improving Trends	16
Stations with No Trends	14
Stations with Deteriorating Trends	1

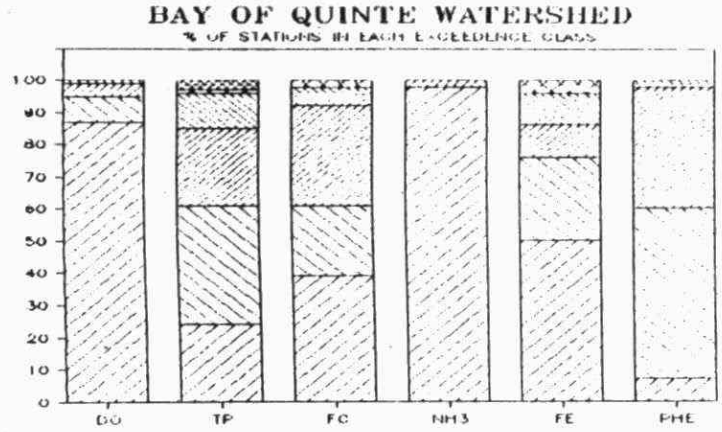




Historical Trends:

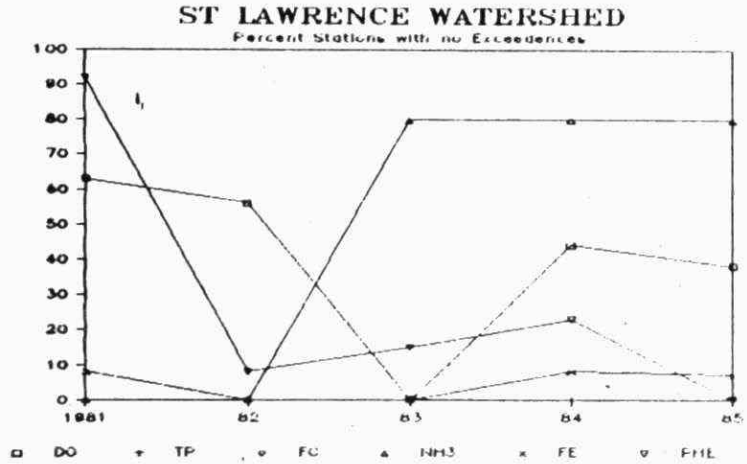
Stations with Improving Trends	27
Stations with No Trends	10
Stations with Deteriorating Trends	4

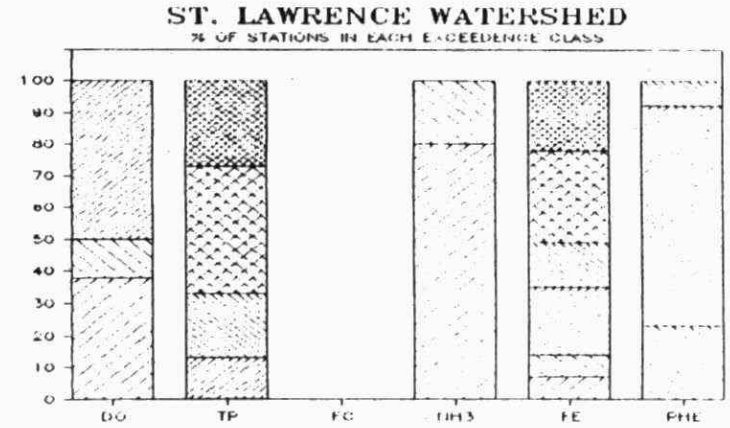




Historical Trends:

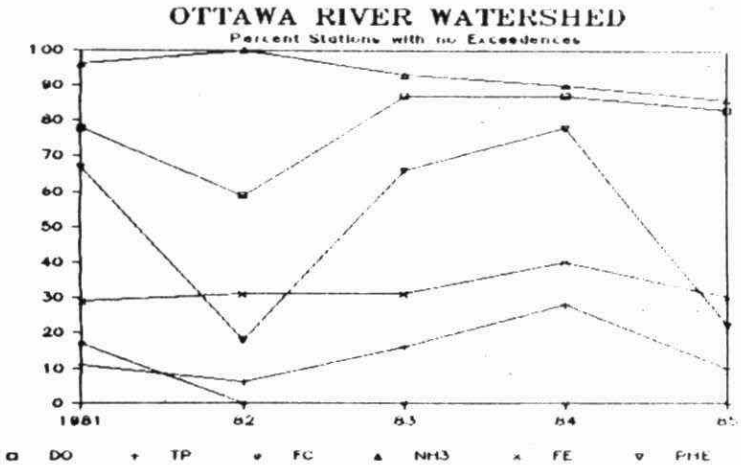
Stations with Improving Trends	7
Stations with No Trends	2
Stations with Deteriorating Trends	0

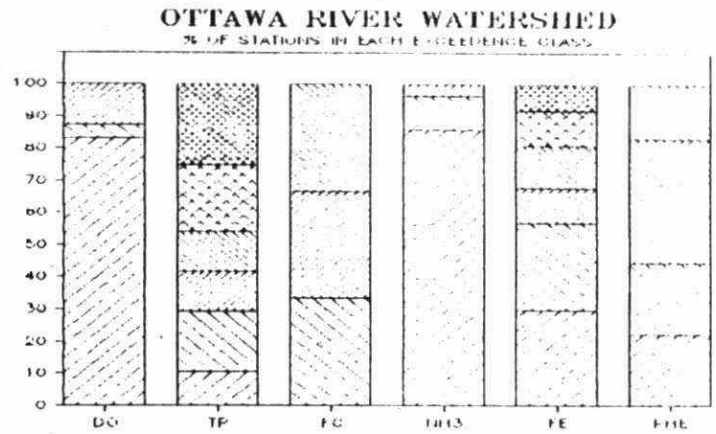




Historical Trends:

Stations with Improving Trends	0
Stations with No Trends	9
Stations with Deteriorating Trends	0





Historical Trends:

Stations with Improving Trends	1
Stations with No Trends	0
Stations with Deteriorating Trends	0

APPENDIX I

AIR QUALITY EVALUATION BY GEOGRAPHICAL LOCATION

APPENDIX I

AIR QUALITY EVALUATION BY GEOGRAPHICAL LOCATION

The air quality at all locations in Ontario with long term sampling stations is presented in the tables on pages 189 to 234.

The following items explain the column headings used in the tables.

Column 1: Classification of Station Locations

The location of each monitoring station has been classified as being source oriented, commercial, residential, urban or rural (or a combination of these).

Column 2: Number of Stations

The number of sampling stations used for monitoring at each geographic location.

Column 3: Range of Annual Averages

For each geographic location, the minimum to maximum range of annual averages monitored at all stations is shown. When only one monitoring station has been sampled at a particular location, its annual average concentration is recorded. Units of measurement for each parameter are indicated in the table of Ambient Air Quality Criteria.

Column 4-8: The Annual Criteria, 1-Month Criteria, 8-Hour Criteria and 1-Hour Criteria given in the table of Ambient Air Quality Criteria.

Column 5-8: % Data Above Criterion

In addition to the numerical percentages, these columns record the actual number of exceedences (x) and the total number of sampling periods (y) in the format (x/y). All the data are for the 1984 calendar year.

Column 9: Major Sources of Pollution

The major factors influencing data values at each station are provided in this column. The interpretation for each code number is as follows:

1 ... Generating Station
2 ... Iron and Steel
3 ... Non-Ferrous Metals
4 ... Forest Products, Pulp and Paper
5 ... Petrochemical
6 ... Non-Metallic Mineral Production (cement, quarries, etc.)
7 ... Grain Elevators
8 ... Miscellaneous Manufacturing
9 ... Other Industrial Sources
10 ... Space Heating
11 ... Incineration
12 ... Agriculture
13 ... Fugitive Sources
14 ... Photochemical Reactions in the Atmosphere
15 ... Natural
16 ... General Urban
17 ... Construction
18 ... Unknown
19 ... Vehicular Transportation
20 ... Long Range Transport or Transboundary

Column 10: 1985 Planned Results

The planned 1985 results are presented for purposes of comparison with the 1985 Actual Results.

AMBIENT AIR QUALITY CRITERIA*

The table below presents ambient air quality criteria for the monitored parameters.

	Annual	1-Month	24-Hour	8-Hour	1-Hour
Sulphur Dioxide	0.02 ppm		0.10 ppm		0.25 ppm
Nitrogen Dioxide			0.10 ppm		0.20 ppm
Carbon Monoxide				13 ppm	30 ppm
Soiling Index	0.5 COH/1000 ft		1.0 COH/1000 ft		
Ozone					0.08 ppm
Dustfall	4.5 g/m^2/30 days	7.0 g/m^2/30 days			
Total Reduced Sulphur					27 ppb
Lead in Suspended Particulate Matter			5.0 ug/m^3		
Total Suspended Particulate Matter	60 ug/m^3 (geometric mean)		120 ug/m^3		
Fluorides		40 ug/100 cm^2 of limed filter paper			

* Ontario Regulation 873/74 under the Environmental Protection Act.

LOCATION / Contaminant	1985 RESULTS: Classification of Station Locations	Number of Stations	Range of Annual Averages	Number of Stations Above Annual Criterion	% Data Above 1-Month Criterion	% Data Above 24-Hour Criterion	% Data Above 8-Hour Criterion	% Data Above 1-Hour Criterion	Major Source of Pollution (Code)	1985 PLANNED RESULTS
ALLISTON										
Ozone	Rural	1	.022					0.2 (12) (4813)	14, 20	New station, 1984
AMHERSTBURG										
Total Suspended Particulate Matter	Industrial/ Residential	1	46	0		3.7 (2) (54)			9	No significant change from 1984
Localized Problem(s):	Quarrying and manufacturing operations at Allied Chemical lead to complaints about particulates emission. Fluorides and chlorides emissions from Allied have been reduced resulting in improved impacts on vegetation. Further abatement in progress.									
ATIKOKAN										
Total Suspended Particulate Matter	Commercial	1	23	0		0 (0) (57)			1	No significant change from 1984
AURORA										
Dustfall	Commercial/ Residential	1	5.2	1	25.0 (3) (12)				8,19	New station, 1984
AYR										
Dustfall	Source oriented (Date Industries)	1	23.3	1	90.9 (10) (11)				2	No significant change from 1984
Localized Problem(s):	Dustfall is causing nuisance effects resulting in complaints, reduced recreational use and costs for cleaning, maintenance and repairs of buildings and/or other objects. Abatement is required and negotiations with Date Industries are underway.									

LOCATION / Contaminant	1985 RESULTS: Classification of Station Locations	Number of Stations	Range of Annual Averages	Number of Stations Above Annual Criterion	% Data Above 1-Month Criterion	% Data Above 24-Hour Criterion	% Data Above 8-Hour Criterion	% Data Above 1-Hour Criterion	Major Source of Pollution (Code)	1985 PLANNED RESULTS
BALMERTOWN										
Sulphur Dioxide	Source oriented	1	.010	0		.6 (2) / (341)		1.4 (114) / (8192)	3	No significant change from 1984
Localized Problem(s):	Sulphur dioxide from Campbell Red Lake Mines Ltd. is causing odours and vegetation damage occasionally resulting in complaints and reduced production of agricultural crops, lumber and/or ornamental shrubs. Company has implemented a voluntary emission reduction program.									
BARRIE										
Sulphur Dioxide	Commercial/ Residential	1	.003	0		0 (0) / (264)		0 (0) / (6352)	8,10,20	No significant change from 1984
Total Suspended Particulate Matter	Commercial/ Residential	1	32	0		1.0 (1) / (98)			8, 7,19	" "
Dustfall	Commercial/ Residential	1	2.4	0	0 (0) / (11)				8,13,16	New station, 1984
BEACHVILLE										
Total Suspended Particulate Matter	Rural/ Industrial	3	57-65	1		13.4 33 / 194			6,13,19	No significant change from 1984
Localized Problem(s):	Particulate matter is causing property corrosion and soiling resulting in complaints, concern among local citizens, and increased costs for cleaning, maintenance and repairs of buildings and/or other objects. Enforcement is planned or is under way for Beachvilime plants 1 and 2 and Stelco lime facilities, as well as Canada Cement Lafarge and Federal White Cement.									

LOCATION / Contaminant	1985 RESULTS: Classification of Station Locations	Number of Stations	Range of Annual Averages	Number of Stations Above Annual Criterion	% Data Above 1-Month Criterion	% Data Above 24-Hour Criterion	% Data Above 8-Hour Criterion	% Data Above 1-Hour Criterion	Major Source of Pollution (Code)	1985 PLANNED RESULTS
BELLEVILLE										
Total Suspended Particulate Matter	Urban	1	53	0		3.9 (2)/(51)			16	No significant change from 1984
Lead in Suspended Particulate Matter				Discontinued						
BLIND RIVER										
Total Suspended Particulate Matter	Residential/ Commercial/ Source Oriented	1	20	0		0 (0)/(43)			9	New station, 1984
BOWMANVILLE										
Dustfall	Industrial/ Residential	2	3.2-3.9	0	0 (0)/(24)				8	New station, 1984
	Source Oriented	2	5.7-8.0	2	45.5 (5)/(11)				6	
BRAMPTON										
Total Suspended Particulate Matter	Residential/ Industrial	1	62	1		7.5 (3)/(40)			8,19	No significant change from 1984
Dustfall	Industrial/ Residential	1	3.4	0	9.1 (1)/(11)				8,19	New station, 1984
Fluorides	Source Oriented	7	28-482		50.0 (38)/(76)				6	" "

LOCATION / Contaminant	1985 RESULTS: Classification of Station Locations	Number of Stations	Range of Annual Averages	Number of Stations Above Annual Criterion	% Data Above 1-Month Criterion	% Data Above 24-Hour Criterion	% Data Above 8-Hour Criterion	% Data Above 1-Hour Criterion	Major Source of Pollution (Code)	1985 PLANNED RESULTS
BRANTFORD										
Dustfall	Source Oriented (Bell City)	1	6.3	1	25 (3)/(12)				2	No significant change from 1984
	Source Oriented (Massey Ferguson)	2	3.8-6.0	1	12.5 (3)/(24)				2	" "
BRUCE TWP.										
Sulphur Dioxide	Rural	1	.002	0	-----	0 (0)/(330)		0 (0)/(7910)	1	No significant change from 1984
Total Reduced Sulphur	Rural	1	.0001		-----				1	" "
Ozone	Rural	1	.035					1.1 (86)/(7957)	14,20	" "
Localized Problem(s):	Ozone is causing vegetation damage resulting in reduced production of agricultural crops, lumber and/or ornamental shrubs. Additional regulatory programs/policies are required.									
BURLINGTON										
Sulphur Dioxide	Residential	1	.004	0		0 (0)/(354)		0 (0)/(8496)	2, 8,10, 20	No significant change from 1984
Nitrogen Dioxide	Residential	1	.025			0 (0)/(345)		0 (0)/(8222)	19,20	" "

LOCATION / Contaminant	1985 RESULTS: Classification of Station Locations	Number of Stations	Range of Annual Averages	Number of Stations Above Annual Criterion	% Data Above 1-Month Criterion	% Data Above 24-Hour Criterion	% Data Above 8-Hour Criterion	% Data Above 1-Hour Criterion	Major Source of Pollution (Code)	1985 PLANNED RESULTS
BURLINGTON (cont'd)										
Carbon Monoxide	Residential		1.1				0 (0)/(8555)	0 (0)/(8555)	19	No significant change from 1984
Ozone	Residential	1	.021					0.2 (19)/(8239)	14,20	" "
Dustfall	Residential	1	4.2	0	20.0 (2)/(10)				8,13,19	New station, 1984
	Source Oriented	3	2.1-3.8	0	0 (0)/(3)				2	
Total Suspended Particulate Matter	Residential	1	53	0		7.9 (9)/(114)			8,19	No significant change from 1984
Fluorides	Source Oriented	1	107		75.0 (9)/(12)				6	New station, 1984
Localized Problem(s):	Amines are causing odours resulting in complaints in the vicinity of S.W. Fearman meat packing plant. Kish emission from the steel plants in Hamilton causes complaints and reduced recreational use of property. Abatement is required to meet existing standards, guidelines or criteria. Monitoring is underway around Canada Brick for potential vegetation damage caused by fluoride emissions.									
CHATHAM										
Total Suspended Particulate Matter	Commercial	1	43	0		3.7 (2)/(54)			8,16,19	No significant change from 1984

LOCATION / Contaminant	1985 RESULTS: Classification of Station Locations	Number of Stations	Range of Annual Averages	Number of Stations Above Annual Criterion	% Data Above 1-Month Criterion	% Data Above 24-Hour Criterion	% Data Above 8-Hour Criterion	% Data Above 1-Hour Criterion	Major Source of Pollution (Code)	1985 PLANNED RESULTS
CHIPPAWA										
Total Suspended Particulate Matter	Source Oriented	2	44-64	1		4.9 (5)/(102)			8,15	No significant change from 1984
Sulphur Dioxide	Source Oriented	1	.005	0		0 (0)/(365)		0 (0)/(8688)	8	Station to be moved, 1984 or 1985
Total Reduced Sulphur	Source Oriented	1	2.1					0.5 (33)/(6495)	8	" "
Dustfall	Source Oriented (Norton, all of above)	2	3.9-7.7	1	33.3 (8)/(24)				8,16	No significant change from 1984
Localized Problem(s):	Total suspended particulate matter, dustfall, and total reduced sulphur are causing odours and nuisance effects resulting in complaints, reduced recreational use and increased costs for cleaning, maintenance and repairs of buildings and/or other objects. A tall stack has recently been installed. The effects are being monitored.									
COBALT										
Total Suspended Particulate Matter	Residential	2	10-14	0		0 (0)/(57)			15	New station, 1984
COLLINGWOOD										
Dustfall	Commercial/ Residential	1	9.2	1	63.6 (7)/(11)				8,19	New station, 1984
	Rural	1	4.5	0	9.1 (1)/(11)				8	" "

LOCATION / Contaminant	1985 RESULTS: Classification of Station Locations	Number of Stations	Range of Annual Averages	Number of Stations Above Annual Criterion	% Data Above 1-Month Criterion	% Data Above 24-Hour Criterion	% Data Above 8-Hour Criterion	% Data Above 1-Hour Criterion	Major Source of Pollution (Code)	1985 PLANNED RESULTS
CORNWALL										
Sulphur Dioxide	Residential	1	.010	0		0 (0)/(349)		0 (0)/(8285)	4	No significant change from 1984
Nitrogen Dioxide	Residential	1	.011			0 (0)/(340)		.02 (0)/(8055)	19,20	" "
Ozone	Residential	1	.022					.04 (3)/(8376)	14,20	" "
Total Reduced Sulphur	Source Oriented	1	3.1					0.4 (14)/(3812)	4	" "
	Residential	1	1.8					2.3 (188)/(8185)	4	" "
Total Suspended Particulate Matter	Residential	1	42	0		0 (0)/(42)			16	" "
	Commercial	1	49	0		2.1 (1)/(47)			16	" "
Lead in Suspended Particulate Matter	Residential	1	2.0			0 (0)/(42)			19	" "
Soiling Index	Residential	1	.10	0		0 (0)/(365)		0.2 (14)/(8447)	16,19	" "
Carbon Monoxide	Residential	1	1.1				0 (0)/(1054)	0 (0)/(8432)	16,19	" "
Localized Problem(s):	Long range transport of ozone and mercury from the local chlor-alkali plant are causing concern among local citizens and may be affecting agriculture. Additional regulatory programs/policies are required for ozone. Reduced sulphur compounds continue to exceed criteria on a frequent basis. Further abatement is required.									

LOCATION / Contaminant	1985 RESULTS: Classification of Station Locations	Number of Stations	Range of Annual Averages	Number of Stations Above Annual Criterion	% Data Above 1-Month Criterion	% Data Above 24-Hour Criterion	% Data Above 8-Hour Criterion	% Data Above 1-Hour Criterion	Major Source of Pollution (Code)	1985 PLANNED RESULTS
DRYDEN										
Total Reduced Sulphur	Source Oriented	1	1.0					0.2 (17) / (7821)	4	No significant change from 1984
Localized Problem(s):	Total reduced sulphur from Great Lakes Forest Products Ltd. is causing odours resulting in concern among local citizens and reduced recreational use. Enforcement is planned or underway.									
EAST YORK										
Fluorides	Source Oriented	3	24-573		52.8 (19) / (36)				6	New station, 1984
Total Suspended Particulate Matter	Source Oriented	1	50			0 (0) / (105)			3	
ELK LAKE										
Dustfall	Industrial/ Residential	2	4.2-10.4	1	38.9 (7) / (18)				4	No significant change from 1984
Localized Problem(s)	Dustfall from forest products industry is causing concern among local citizens. Enforcement is planned.									
ELLIOT LAKE										
Total Suspended Particulate Matter	Industrial/ Residential	2	4-19	0		0 (0) / (52)			3,10	No significant change from 1984
Dustfall	Monitoring Program Discontinued									Dustfall monitoring discontinued

LOCATION / Contaminant	1985 RESULTS: Classification of Station Locations	Number of Stations	Range of Annual Averages	Number of Stations Above Annual Criterion	% Data Above 1-Month Criterion	% Data Above 24-Hour Criterion	% Data Above 8-Hour Criterion	% Data Above 1-Hour Criterion	Major Source of Pollution (Code)	1985 PLANNED RESULTS
ENGLEHART										
Dustfall	Industrial/ Residential/ Rural	4	1.2-6.3	1	10.4 (5) / (48)				4	No significant change from 1984
Localized Problem(s)	Dustfall from forest products/pulp and paper industry is causing concern among local citizens. Abatement is required to meet existing standards, guidelines or criteria.									
ESPANOLA										
Total Suspended Particulate Matter	Industrial/ Residential	1	42	0		0 (0) / (53)			4,10	No siginficant change from 1984
Dustfall	Industrial	3	3.4-12.1	2	30.0 (9) / (30)					" "
Total Reduced Sulphur	Industrial/ Residential	1	1.2	N/A				.04 (3) / (7150)	4	New station, 1984
Localized Problem(s)	Reduced sulphur and dustfall from E.B. Eddy pulp and paper mill are causing odours and aesthetic effects, resulting in complaints, reduced recreational use of property and increased cleaning, maintenance and repairs of buildings and/or other objects. Abatement is required to meet existing standards, guidelines or criteria. Mobile monitoring survey to be conducted by Air Resources Branch in August 1986 to document changes resulting from modernization program.									

LOCATION / Contaminant	1985 RESULTS									1985 PLANNED RESULTS
	Classification of Station Locations	Number of Stations	Range of Annual Averages	Number of Stations Above Annual Criterion	% Data Above 1-Month Criterion	% Data Above 24-Hour Criterion	% Data Above 8-Hour Criterion	% Data Above 1-Hour Criterion	Major Source of Pollution (Code)	
ETOBICOKE										
Sulphur Dioxide	Residential	2	.005 - .007	0		0 (0)/(635)		.01 (1)/(15231)	1, 8,10, 20	No significant change from 1984
	Industrial	2	.004 - .005	0		0 (0)/(624)		0 (0)/(15021)	1, 8,10, 20	" "
Nitrogen Dioxide	Residential	1	.026			0 (0)/(340)		0 (0)/(8134)	14,19,20	" "
	Industrial	1	.032			0 (0)/(359)		0 (0)/(8492)	14,19,20	" "
Carbon Monoxide	Residential	1	1.3				0 (0)/(8098)	0 (0)/(8098)	19	" "
	Industrial	1	1.0				0 (0)/(8437)	0 (0)/(8437)	19	" "
Soiling Index	Industrial	1	.47	0		2.0 (7)/(357)			8,16,19	" "
Dustfall	Residential	7	2.4-6.8	3	14.9 (11)/(74)				8,16,19	" "
	Industrial	4	3.4-7.2	1	4.3 (2)/(46)				8,16,19	" "
	Source Oriented	3	4.4-10.9	2	25.0 (9)/(36)				9	" "

LOCATION / Contaminant	1985 RESULTS: Classification of Station Locations	Number of Stations	Range of Annual Averages	Number of Stations Above Annual Criterion	% Data Above 1-Month Criterion	% Data Above 24-Hour Criterion	% Data Above 8-Hour Criterion	% Data Above 1-Hour Criterion	Major Source of Pollution (Code)	1985 PLANNED RESULTS
ETOBICOKE (cont'd)										
Ozone	Residential	1	.018					0.4 (33) / (8026)	14,20	No significant change from 1984
	Industrial	1	.014					0.2 (14) / (8461)	14,20	" "
Lead in Suspended Particulate Matter	Residential	1	.2			0 (0) / (115)			19	" "
	Industrial	2	.2-.5			0 (0) / (401)			3,19	" "
Total Suspended Particulate Matter	Residential	2	44-51	0		3.6 (15) / (414)			8,17,19	" "
	Industrial	3	52-59	0		5.0 (28) / (559)			8,19	" "
FORT ERIE										
Sulphur Dioxide	Rural	1	.004	0		0 (0) / (208)		0 (0) / (5124)	10,20	No significant change from 1984

LOCATION / Contaminant	1985 RESULTS: Classification of Station Locations	Number of Stations	Range of Annual Averages	Number of Stations Above Annual Criterion	% Data Above 1-Month Criterion	% Data Above 24-Hour Criterion	% Data Above 8-Hour Criterion	% Data Above 1-Hour Criterion	Major Source of Pollution (Code)	1985 PLANNED RESULTS
FORT FRANCES										
Dustfall	Source Oriented	3	4.9-12.7	3	55.9 (19)/(34)				4,13	No significant change from 1984
Total Reduced Sulphur	Source Oriented	2	1.1-2.0					0.7 (115)/(17304)	4,20	" "
Total Suspended Particulate Matter	Source Oriented	2	26-51	0		4.4 (5)/(114)			4	" "
Localized Problem(s):	Total reduced sulphur and dustfall from Boise Cascade Canada Ltd. are causing odours, soiling and health effects resulting in complaints, concern among local citizens, and reduced recreational use. Enforcement is planned or underway.									
GODERICH										
Total Suspended Particulate Matter	Residential	1	38	0		1.7 (1)/(60)			7,13,16	No significant change from 1984
Localized Problem(s):	Suspended particulate matter is causing nuisance effects resulting in complaints. Additional regulatory programs/ policies are required for the Goderich Elevators.									
GREENSVILLE										
Dustfall	Source Oriented (Steetley's Quarry)	6	5.2-14.2	6	50.0 (36)/(72)				6,13	No significant change from 1984
Localized Problem(s):	Dustfall is causing nuisance effects resulting in complaints, reduced recreational use and increased costs for cleaning, maintenance and repairs of buildings and/or other objects. No further protection efforts are possible.									

LOCATION / Contaminant	1985 RESULTS: Classification of Station Locations	Number of Stations	Range of Annual Averages	Number of Stations Above Annual Criterion	% Data Above 1-Month Criterion	% Data Above 24-Hour Criterion	% Data Above 8-Hour Criterion	% Data Above 1-Hour Criterion	Major Source of Pollution (Code)	1985 PLANNED RESULTS
GUELPH										
Total Suspended Particulate Matter	Commercial	1	30	0		1.7 (1) / (58)			16,19	No significant change from 1984
	Source Oriented (Dolime)	1	61	1		12.7 (7) / (55)			6	" "
Sulphur Dioxide	Commercial	1	.003	0		0 (0) / (328)		0 (0) / (7878)	10	" "
Localized Problem(s):	Suspended particulate matter from Dolime is causing nuisance effects resulting in complaints and increased costs for cleaning, maintenance and repairs of buildings and/or other objects. Abatement is required and stack testing is now complete.									
HAMILTON										
Sulphur Dioxide	Source Oriented	2	.009-.011	0		0 (0) / (694)		0 (0) / (164519)	2, 8,10	No significant change from 1984
Carbon Monoxide	Source Oriented	2	.3-1.2				0 (0) / (2080)	0 (0) / (16636)	2,19	" "
Nitrogen Dioxide	Source Oriented	2	.023-.025			0 (0) / (696)		0 (0) / (16488)	2, 8,10, 19	" "
Ozone	Source Oriented Industrial	1	.019					.2 (17) / (8157)	14,20	" "

LOCATION / Contaminant	1985 RESULTS									1985 PLANNED RESULTS
	Classification of Station Locations	Number of Stations	Range of Annual Averages	Number of Stations Above Annual Criterion	% Data Above 1-Month Criterion	% Data Above 24-Hour Criterion	% Data Above 8-Hour Criterion	% Data Above 1-Hour Criterion	Major Source of Pollution (Code)	
HAMILTON (cont'd)										
Soiling Index	Source Oriented	2	.39-.52	1		1.8 (13)/(705)			2, 8, 9, 16	No significant change from 1984
Total Reduced Sulphur	Source Oriented	2	1.0-1.4					.1 (10)/(16402)	2, 8	" "
Total Suspended Particulate Matter	Source Oriented	3	69-113	3		20.8 (149)/(717)			2, 8, 9, 13,16,19	" "
	Commercial	4	42-56	0		1.4 (3)/(222)			2, 8, 9, 11,16,19	" "
	Residential	4	41-56	0		3.1 (7)/(227)			2, 8, 9, 16,19	" "
	Industrial	2	61-83	2		21.6 (25)/(116)			2, 8,13, 16,19	" "
Lead in Suspended Particulate Matter	Source Oriented	3	.1-.3			0 (0)/(161)			19	" "
	Commercial	1	.2			0 (0)/(57)			19	" "
	Residential	2	.1			0 (0)/(115)			19	" "

LOCATION / Contaminant	1985 RESULTS: Classification of Station Locations	Number of Stations	Range of Annual Averages	Number of Stations Above Annual Criterion	% Data Above 1-Month Criterion	% Data Above 24-Hour Criterion	% Data Above 8-Hour Criterion	% Data Above 1-Hour Criterion	Major Source of Pollution (Code)	1985 PLANNED RESULTS
HAMILTON (cont'd)										
Lead in Suspended Particulate Matter	Industrial	2	.2			0 (0)/(115)			19	No significant change from 1984
Localized Problem(s):	Total suspended particulate matter, dustfall and sometimes total reduced sulphur are causing odours and nuisance effects and may be causing health effects. Complaints, concern among local citizens and increased costs for cleaning, maintenance and repairs of buildings and/or other objects have resulted. Major sources are under Control Orders.									
HEARST										
Dustfall	Industrial/ Residential	7	3.8-11.7	6	39.7 (23)/(58)				4	No significant change from 1984
Localized Problem(s):	Dustfall from forest products industry is resulting in complaints from local citizens. Enforcement is planned or under way.									
KAPUSKASING										
Dustfall	Industrial/ Residential	4	4.2-11.1	3	37.9 (11)/(29)				4	No significant change from 1984
Localized Problem(s):	Dustfall is causing soiling resulting in increased costs for cleaning, maintenance and repairs of buildings and/or other objects as well as a minor reduction in recreational use. Enforcement is planned or under way.									

LOCATION / Contaminant	1985 RESULTS: Classification of Station Locations	Number of Stations	Range of Annual Averages	Number of Stations Above Annual Criterion	% Data Above 1-Month Criterion	% Data Above 24-Hour Criterion	% Data Above 8-Hour Criterion	% Data Above 1-Hour Criterion	Major Source of Pollution (Code)	1985 PLANNED RESULTS
KENORA										
Dustfall	Source Oriented	2	5.6-9.7	2	39.1 (9)/(23)				4	No significant change from 1984
Sulphur Dioxide	Source Oriented	1	.001	0		0 (0)/(233)		0 (0)/(5576)	4	" "
Localized Problem(s):	Dustfall from bark burning boilers at sulphite pulp mill owned by Boise Cascade Canada Ltd. is causing soiling resulting in complaints and increased costs for cleaning, maintenance and repairs of buildings and/or other objects as well as a minor reduction in recreational use. Enforcement is planned or underway.									
KINGSTON										
Ozone	Urban	1	0	0	0	0		.5 (37)/(8100)	14,20	New Station, May 1984
Localized Problem(s):	Ozone from transboundary sources may be affecting agriculture. Additional regulatory programs/policies are required.									

LOCATION / Contaminant	1985 RESULTS: Classification of Station Locations	Number of Stations	Range of Annual Averages	Number of Stations Above Annual Criterion	% Data Above 1-Month Criterion	% Data Above 24-Hour Criterion	% Data Above 8-Hour Criterion	% Data Above 1-Hour Criterion	Major Source of Pollution (Code)	1985 PLANNED RESULTS
KITCHENER										
Sulphur Dioxide	Commercial	1	.002	0		0 (0)/(339)		0 (0)/(8175)	10	No significant change from 1984
Carbon Monoxide	Commercial	1	.8				0 (0)/(1073)	0 (0)/(8583)	19	" "
Nitrogen Dioxide	Commercial	1	.029			0 (0)/(365)		0 (0)/(8654)	10,19	" "
Ozone	Commercial	1	.020					.3 (27)/(8534)	14,20	" "
Total Suspended Particulate Matter	Commercial	1	46	0		1.8 (1)/(57)			16,19	" "
Lead in Suspended Particulate Matter	Commercial	1	.4			0 (0)/(57)			19	" "
Dustfall	Source Oriented (Hogg Fuel & Supply)	1	7.3	1	54.5 (6)/(11)				6,15,18	" "
Localized Problem(s):	Dustfall from Hogg Fuel and Supply is causing nuisance effects resulting in complaints and increased costs for cleaning, maintenance and repairs of buildings and/or other objects. No protection efforts are planned.									

LOCATION / Contaminant	1985 RESULTS: Classification of Station Locations	Number of Stations	Range of Annual Averages	Number of Stations Above Annual Criterion	% Data Above 1-Month Criterion	% Data Above 24-Hour Criterion	% Data Above 8-Hour Criterion	% Data Above 1-Hour Criterion	Major Source of Pollution (Code)	1985 PLANNED RESULTS
LONDON										
Sulphur Dioxide	Commercial	1	.002	0		0 (0)/(340)		0 (0)/(8045)	10	No significant change from 1984
Nitrogen Dioxide	Commercial	1	.03			0 (0)/(359)		0 (0)/(8470)	16,19	" "
Carbon Monoxide	Commercial	1	.3				0 (0)/(1019)	0 (0)/(8152)	16,19	" "
Soiling Index	Commercial	1	.3	0		.3 (1)/(357)			8,16,19	" "
Ozone	Commercial	1	.021					.4 (31)/(8346)	14,20	" "
Total Suspended Particulate Matter	Commercial	2	42-44	0		2.6 (2)/(102)			8,16,19	" "
Lead in Suspended Particulate Matter	Urban	2	.1-.2			0 (0)/(102)			19	" "
Localized Problem(s):	Ozone is causing vegetation damage resulting in reduced production of agricultural crops, lumber, and/or ornamental shrubs. Additional regulatory programs/policies are required.									

LOCATION / Contaminant	1985 RESULTS: Classification of Station Locations	Number of Stations	Range of Annual Averages	Number of Stations Above Annual Criterion	% Data Above 1-Month Criterion	% Data Above 24-Hour Criterion	% Data Above 8-Hour Criterion	% Data Above 1-Hour Criterion	Major Source of Pollution (Code)	1985 PLANNED RESULTS
LONGLAC										
Dustfall	Source Oriented	1	5.0	1	8.3 (1)/(12)				4	N/A
Localized Problem(s):	Smoke from wood waste burners operated by Weldwood of Canada Ltd. and Kimberly Clark of Canada Ltd. cause periodic reduced visibility and soiling effects, plus complaints from local residents. Enforcement in underway.									
MARATHON										
Total Reduced Sulphur	Source Oriented	1	1.3					.7 (52)/(7914)	4	New Station
Localized Problem(s):	Total reduced sulphur from James River-Marathon Ltd. is causing odours resulting in some concern among local citizens. Enforcement is planned or underway.									
MARKHAM										
Dustfall	Residential	1	3.2	0	8.3 (1)/(12)				8,19	New station, 1984
MISSISSAUGA										
Sulphur Dioxide	Residential	2	.006-.009	0		0 (0)/(687)		.01 (1)/(16510)	1, 5, 8, 10,20	No significant change from 1984
Nitrogen Dioxide	Residential	1	.026			0 (0)/(352)		0 (0)/(8369)	19,20	" "
Carbon Monoxide	Residential	1	1.9				0 (0)/(7734)	0 (0)/(7734)	19	" "
Ozone	Residential	1	.016					.2 (13)/(8412)	14,20	" "

LOCATION / Contaminant	1985 RESULTS: Classification of Station Locations	Number of Stations	Range of Annual Averages	Number of Stations Above Annual Criterion	% Data Above 1-Month Criterion	% Data Above 24-Hour Criterion	% Data Above 8-Hour Criterion	% Data Above 1-Hour Criterion	Major Source of Pollution (Code)	1985 PLANNED RESULTS
MISSISSAUGA (cont'd)										
Dustfall	Residential	7	2.9-5.5	2	7.9 (6)/(76)					New station, 1984
	Residential/ Industrial	7	3.1-5.4	2	10.8 (9)/(83)					" "
	Industrial	6	3.4-7.6	4	30.4 (21)/(69)					" "
	Source Oriented	2	3.0-4.6	0	0 (0)/(22)					" "
Lead in Suspended Particulate Matter	Residential	2	0.3		0 (0)/(24)	0 (0)/(173)			19	No significant change from 1984
	Industrial	3	1.1-2.9		13.9 (5)/(36)	10.2 (98)/(962)			3,19	" "
Total Suspended Particulate Matter	Residential	2	46-53	0		4.2 (10)/(236)			8,19	" "
	Industrial	3	60-61	1		6.2 (61)/(986)			3, 8,19	" "
Fluorides	Source Oriented	8	15-373		22.6 (21)/(93)				5, 6	New station, 1984
Localized Problem(s):	Hydrocarbons, sulphur dioxide and particulates are causing odours and may be causing health effects resulting in complaints and concern among local citizens. Enforcement is planned or underway for Gulf, St. Lawrence Cement and Anachemia.									
MOORE TWP.										
Sulphur Dioxide	Rural/ Industrial	1	.004			0 (0)/(335)		0 (0)/(8046)	1, 5	No significant change from 1984

LOCATION / Contaminant	1985 RESULTS: Classification of Station Locations	Number of Stations	Range of Annual Averages	Number of Stations Above Annual Criterion	% Data Above 1-Month Criterion	% Data Above 24-Hour Criterion	% Data Above 8-Hour Criterion	% Data Above 1-Hour Criterion	Major Source of Pollution (Code)	1985 PLANNED RESULTS
MOORE TWP. (cont'd)										
Total Suspended Particulate Matter	Rural	3	34-36	0		1.6 (7)/(449)			12,19	No significant change from 1984
	Residential	1	34	0		1.8 (1)/(57)			16,19	" "
NANTICOKE AREA										
Total Suspended Particulate Matter	Rural/ Industrial	14	26-59	0		2.9 (23)/(795)			1, 2, 9, 12,13	No significant change from 1984
Sulphur Dioxide	Rural/ Industrial	5	.002-.005	0		0 (0)/(1710)		0 (0)/(39706)	1, 2, 5, 9	" "
Total Reduced Sulphur	Rural/ Industrial	3	.2-1.1					0.03 (8)/(23010)	2, 5	" "
Nitrogen Dioxide	Rural/ Industrial	3	.003-.006			0 (0)/(1042)		0 (0)/(24448)	1, 2, 5, 9	" "
Ozone	Rural	2	.031-.034					1.7 (254)/(15191)	14,20	" "
Dustfall	Rural/ Industrial	1	3.8	0	0 (0)/(12)				1, 2,13	" "
NEWCASTLE										
Dustfall	Rural	1	3.1	0	0 (0)/(12)				15,19	New station, 1984
NEWMARKET										
Dustfall	Commercial/ Residential	2	3.5-4.9	0	4.3 (1)/(23)				13,19	New station, 1984

LOCATION / Contaminant	1985 RESULTS: Classification of Station Locations	Number of Stations	Range of Annual Averages	Number of Stations Above Annual Criterion	% Data Above 1-Month Criterion	% Data Above 24-Hour Criterion	% Data Above 8-Hour Criterion	% Data Above 1-Hour Criterion	Major Source of Pollution (Code)	1985 PLANNED RESULTS
NIAGARA FALLS										
Soiling Index	Commercial	1	.20	0		0 (0)/(360)			8,16	No significant change from 1984
Sulphur Dioxide	Commercial	1	.003	0		0 (0)/(357)		0 (0)/(8453)	8,10	" "
	Source Oriented (General Abrasives)	1	.006	0		0 (0)/(359)		0 (0)/(8571)	8,13	" "
Total Reduced Sulphur	Source Oriented (General Abrasives)	1	1.6					.04 (3)/(7547)	8	" "
Total Suspended Particulate Matter	Commercial	1	44	0		3.4 (2)/(58)			16	" "
	Source Oriented (Cyanid)	1	67	1		8.8 (5)/(57)			8	" "
	Source Oriented (General Abrasives)	1	79	1		16.4 (9)/(55)			8,13	" "
Localized Problem(s):	Total reduced sulphur and particulates are causing odours and nuisance effects resulting in complaints. Negotiations with General Abrasives are ongoing.									
NORTH BAY										
Sulphur Dioxide	Residential	1	.002	0		0		0 (0)/(7582)	10	No significant change from 1984

LOCATION / Contaminant	1985 RESULTS: Classification of Station Locations	Number of Stations	Range of Annual Averages	Number of Stations Above Annual Criterion	% Data Above 1-Month Criterion	% Data Above 24-Hour Criterion	% Data Above 8-Hour Criterion	% Data Above 1-Hour Criterion	Major Source of Pollution (Code)	1985 PLANNED RESULTS
NORTH BAY (cont'd)										
Total Suspended Particulate Matter	Residential/ Industrial	2	24-25	0		0 (0)/(105)			10,19	No significant change from 1984
Lead in Suspended Particulate Matter	Commercial/ Residential	1	.1		0	0 (0)/(40)			19	" "
Dustfall	Commercial/ Residential/ Industrial	2	3.4-9.1	1	3				19	" "
NORTH YORK										
Sulphur Dioxide	Residential	2	.005-.008	0		0 (0)/(491)		0 (0)/(11729)	1, 8,10, 20	No significant change from 1984
Nitrogen Dioxide	Residential	2	.027-.038			0 (0)/(504)		0 (0)/(12011)	19,20	" "
Carbon Monoxide	Residential	2	1.1-1.4				0 (0)/(10387)	0 (0)/(10387)	19	" "
Soiling Index	Residential	1	.56	1		9.2 (13)/(142)			8,19,20	" "
Ozone	Residential	1	.012					0.02 (2)/(8329)	14,20	" "
Dustfall	Residential	3	3.2-6.7	1	14.8 (4)/(27)				16,19	New station, 1984
	Commercial/ Residential	4	4.2-9.1	2	14.6 (6)/(41)				16,19	" "
	Industrial	1	8.7	1	66.7 (8)/(12)				8,19	" "

LOCATION / Contaminant	1985 RESULTS: Classification of Station Locations	Number of Stations	Range of Annual Averages	Number of Stations Above Annual Criterion	% Data Above 1-Month Criterion	% Data Above 24-Hour Criterion	% Data Above 8-Hour Criterion	% Data Above 1-Hour Criterion	Major Source of Pollution (Code)	1985 PLANNED RESULTS
NORTH YORK (cont'd)										
Lead in Suspended Particulate Matter	Residential	2	.2-.5			0 (0) / (154)			19	No significant change from 1984
Total Suspended Particulate Matter	Residential	2	40-59	0		4.4 (7) / (160)			8,19.	" "
OAKVILLE										
Sulphur Dioxide	Residential	1	.005	0		0 (0) / (287)		0 (0) / (6800)	5, 8,10, 20	No significant change from 1984
Soiling Index	Residential	1	.30	0		.6 (2) / (350)			8,19	" "
Nitrogen Dioxide	Residential	1	.016			0 (0) / (345)		0 (0) / (8291)	5,19,20	" "
Carbon Monoxide	Residential	1	1.0				0 (0) / (8390)	0 (0) / (8390)	19	" "
Ozone	Residential	1	.022					.2 (13) / (7184)	14,20	" "
Lead in Suspended Particulate Matter	Residential	1	.2			0 (0) / (119)			19	" "
Total Suspended Particulate Matter	Residential	1	43	0		3.4 (4) / (119)				" "
Total Reduced Sulphur	Residential	1	.0026					.1 (9) / (7759)	5, 8	" "

LOCATION / Contaminant	1985 RESULTS: Classification of Station Locations	Number of Stations	Range of Annual Averages	Number of Stations Above Annual Criterion	% Data Above 1-Month Criterion	% Data Above 24-Hour Criterion	% Data Above 8-Hour Criterion	% Data Above 1-Hour Criterion	Major Source of Pollution (Code)	1985 PLANNED RESULTS
OAKVILLE (cont'd)										
Dustfall	Residential	2	3.9-5.6	1	18.2 (4)/(22)				8,19	New station, 1984
	Industrial/ Residential	6	2.4-7.1	1	12.9 (9)/(70)				5, 6, 8, 19	" "
Fluorides	Source Oriented	2	33-46		18.2 (4)/(22)				8	" "
	Industrial/ Residential	2	30		12.5 (3)/(24)				5, 6	" "
Localized Problem(s):	Total reduced sulphur (as hydrogen sulphide), sulphur dioxide, and hydrocarbon emissions from the Petro Canada Refinery are causing odour problems which result in complaints and reduced recreational use of property. Abatement is required to meet existing standards, guidelines or criteria. Monitoring is underway around Weatherspoon Foundry for potential excessive particulate emissions which result in complaints.									
ORILLIA										
Total Suspended Particulate Matter	Residential/ Commercial	1	42	0		1.8 (1)/(55)			7, 8,19	No significant change from 1984
Dustfall	Commercial/ Residential	1	2.8	0	0 (0)/(12)				8,19	New station, 1984
OSHAWA										
Sulphur Dioxide	Residential	1	.003	0		0 (0)/(343)		0 (0)/(8175)	8,10,20	No significant change from 1984
Nitrogen Dioxide	Residential	1	.020			0 (0)/(342)		0 (0)/(8161)	19,20	" "
Carbon Monoxide	Residential	1	.6				0 (0)/(7498)	0 (0)/(7498)	19	" "

LOCATION / Contaminant	1985 RESULTS: Classification of Station Locations	Number of Stations	Range of Annual Averages	Number of Stations Above Annual Criterion	% Data Above 1-Month Criterion	% Data Above 24-Hour Criterion	% Data Above 8-Hour Criterion	% Data Above 1-Hour Criterion	Major Source of Pollution (Code)	1985 PLANNED RESULTS
OSHAWA (cont'd)										
Soiling Index	Residential	1	.37	0		2.1 (7)/(337)			8,19,20	No significant change from 1984
Ozone	Residential	1	.019					.5 (42)/(8173)	14,20	" "
Dustfall	Residential	5	3.0-7.9	2	15.3 (9)/(59)				2, 8,19	New station, 1984
	Source Oriented	5	2.5-13.6	3	26.7 (16)/(60)				2, 8,19	" "
Total Suspended Particulate Matter	Residential	2	41-46	0		5.2 (12)/(232)			8,19	No significant change from 1984
Lead in Suspended Particulate Matter	Residential	2	.2		0 (0)/(24)	0 (0)/(232)			19	" "
Localized Problem(s):	Fugitive dust is causing soiling effects resulting in complaints, concern among local citizens and increased costs for cleaning, maintenance and repairs of buildings and/or other objects. Enforcement is planned or underway for Fittings.									
OTTAWA										
Sulphur Dioxide	Commercial	1	.005	0		0 (0)/(365)		0 (0)/(8390)	16	No significant change from 1984
Nitrogen Dioxide	Commercial	1	.016			0 (0)/(315)		0 (0)/(8300)	14,19	" "
Ozone	Commercial	1	.019					.2 (17)/(8456)	14,16,20	" "
Total Suspended Particulate Matter	Commercial	2	37-42	0		0 (0)/(33)			16	" "

LOCATION / Contaminant	1985 RESULTS: Classification of Station Locations	Number of Stations	Range of Annual Averages	Number of Stations Above Annual Criterion	% Data Above 1-Month Criterion	% Data Above 24-Hour Criterion	% Data Above 8-Hour Criterion	% Data Above 1-Hour Criterion	Major Source of Pollution (Code)	1985 PLANNED RESULTS
OTTAWA (cont'd)										
Lead in Suspended Particulate Matter	Commercial	1	.3			0 (0)/(36)			16,19	No significant change from 1984
Soiling Index	Commercial	1	.18	0		0 (0)/(365)			16	" "
Carbon Monoxide	Commercial	1	1.3				0 (0)/(N/A)	0 (0)/(8588)	16,19	" "
Localized Problem(s):	Ozone may be affecting agriculture. Additional regulatory programs/policies are required.									
PETERBOROUGH										
Sulphur Dioxide	Commercial	1	.002	0		0 (0)/(365)		0 (0)/(8725)	8,10,20	No significant change from 1984
Lead in Suspended Particulate Matter	Commercial	1	.2		0 (0)/(11)	0 (0)/(82)			19	" "
Total Suspended Particulate Matter	Commercial	1	39	0		2.0 (2)/(101)			8	" "
Dustfall	Commercial	1	3.6	0	0 (0)/(12)					New station, 1984
	Residential	1	3.4	0	9.1 (1)/(11)					" "
	Industrial	1	7.1	1	41.7 (5)/(12)					" "
Ozone	Commercial	1	.019					.6 (47)/(7472)	14,20	

LOCATION / Contaminant	1985 RESULTS: Classification of Station Locations	Number of Stations	Range of Annual Averages	Number of Stations Above Annual Criterion	% Data Above 1-Month Criterion	% Data Above 24-Hour Criterion	% Data Above 8-Hour Criterion	% Data Above 1-Hour Criterion	Major Source of Pollution (Code)	1985 PLANNED RESULTS
PICKERING										
Total Suspended Particulate Matter	Residential	1	49	0		4.6 (15)/(326)			1, 8,19	No significant change from 1984
PLYMPTON TOWNSHIP										
Ozone	Rural	1	.028					.6 (25)/(4371)	14,20	No significant change from 1984
Localized Problem(s):	Ozone is causing vegetation damage resulting in reduced production of agricultural crops, lumber and/or ornamental shrubs. Additional regulatory programs/policies are required.									
PORT COLBORNE										
Total Suspended Particulate Matter	Source Oriented	2	43-49	0		3.7 (4)/(109)			3,16	Significant improvement over 1984
PORT HOPE										
Total Suspended Particulate Matter	Residential/ Industrial/ Commercial	3	34-45	0		.5 (1)/(209)			8,19	No significant change from 1984
Dustfall	Residential	1	3.2	0	0 (0)/(11)				13,19	New station, 1984
	Residential/ Industrial/ Commercial	4	2.2-3.5	0	2.3 (1)/(44)				13,19	" "

LOCATION / Contaminant	1985 RESULTS: Classification of Station Locations	Number of Stations	Range of Annual Averages	Number of Stations Above Annual Criterion	% Data Above 1-Month Criterion	% Data Above 24-Hour Criterion	% Data Above 8-Hour Criterion	% Data Above 1-Hour Criterion	Major Source of Pollution (Code)	1985 PLANNED RESULTS
PORT HOPE (cont'd)										
Fluorides	Source Oriented	6	78		18.3 (11)/(60)				9	New station, 1984
	Residential	6	7-24		1.7 (1)/(60)				9	" "
Localized Problem(s):	Fluorides and radiation are causing vegetation damage and may be causing health effects resulting in complaints and concerns among local citizens. Abatement is required to meet existing standards, guidelines or criteria for Eldorado Nuclear.									
RALEIGH TWP.										
Ozone	Rural	1	.022					.2 (17)/(7968)	14,20	No significant change from 1984
Localized Problem(s):	Ozone is causing vegetation damage resulting in reduced production of agricultural crops, lumber, and/or ornamental shrubs. Additional regulatory program/policies are required.									
RAVENSHOE										
Dustfall	Source Oriented/Rural	3							3,19	New station, 1984
Fluorides	Source Oriented/Rural	3							3	" "
Localized Problem(s):	Particulate emissions from around Aluminum Dross Recycling result in complaints and apprehension among citizens. Abatement is required to meet existing standards, guidelines and criteria.									

LOCATION / Contaminant	1985 RESULTS: Classification of Station Locations	Number of Stations	Range of Annual Averages	Number of Stations Above Annual Criterion	% Data Above 1-Month Criterion	% Data Above 24-Hour Criterion	% Data Above 8-Hour Criterion	% Data Above 1-Hour Criterion	Major Source of Pollution (Code)	1985 PLANNED RESULTS
RED ROCK										
Dustfall	Source Oriented	1	4.9	1	27.3 (3)/(11)				4	No significant change from 1984
Total Reduced Sulphur	Source Oriented	1	1.9					1.4 (117)/(8282)	4	" "
Localized Problem(s):	Total reduced sulphur and dustfall from Domtar Packaging Ltd. are causing odours and soiling, and may be causing health effects resulting in complaints, concern among local citizens, reduced recreational use and increased costs for cleaning, maintenance and repairs of buildings and/or other objects. Enforcement is planned or under way.									
RICHMOND HILL										
Dustfall	Residential	1	3.1	0	0 (0)/(12)				8,19	New station, 1984
ROSSLYN										
Fluorides	Source Oriented	2	13-38		8.3 (2)/(24)				6	N/A
Localized Problem(s):	Fluoride from tile plant owned by Great Lakes Ceramics Inc. may cause minor vegetation damage and concern from local citizens plant probably currently meets requirements of air quality for fluoride.									

LOCATION / Contaminant	1985 RESULTS: Classification of Station Locations	Number of Stations	Range of Annual Averages	Number of Stations Above Annual Criterion	% Data Above 1-Month Criterion	% Data Above 24-Hour Criterion	% Data Above 8-Hour Criterion	% Data Above 1-Hour Criterion	Major Source of Pollution (Code)	1985 PLANNED RESULTS
ST. CATHARINES										
Sulphur Dioxide	Commercial	1	.006	0		0 (0)/(354)		0 (0)/(8354)	8,10	No significant change from 1984
Carbon Monoxide	Commercial	1	.2				0 (0)/(780)	0 (0)/(7837)	19	" "
Nitrogen Dioxide	Commercial	1	.017			0 (0)/(348)		0 (0)/(8328)	10,19	" "
Ozone	Commercial	1	.018					.2 (19)/(7897)	14,20	" "
Dustfall	Source Oriented (Aimco)	1	14.5	1	91.7 (11)/(12)				2,13	" "
	Source Oriented (General Motors)	1	8.2	1	75.0 (9)/(12)				2	" "
	Source Oriented (Burnstein)	1	6.4	1	33.3 (4)/(12)				2	" "
Total Suspended Particulate Matter	Commercial	2	50	0		3.5 (2)/(57)			16,19	" "
Lead in Suspended Particulate Matter	Commercial	1	.2			0 (0)/(55)			19	" "

LOCATION / Contaminant	1985 RESULTS: Classification of Station Locations	Number of Stations	Range of Annual Averages	Number of Stations Above Annual Criterion	% Data Above 1-Month Criterion	% Data Above 24-Hour Criterion	% Data Above 8-Hour Criterion	% Data Above 1-Hour Criterion	Major Source of Pollution (Code)	1985 PLANNED RESULTS
ST.CATHARINES(cont'd)										
Soiling Index	Commercial	1	.26	0		0 (0)/(338)			16,19	No significant change from 1984
Localized Problem(s):	Dustfall is causing nuisance effects resulting in complaints, reduced recreational use and increased costs for cleaning, maintenance and repairs of buildings and/or other objects. Abatement measures were implemented by Aimco in 1981, but new measures are required. Abatement is required and negotiations are ongoing with Burnstein.									
ST. MARYS										
Total Suspended Particulate Matter	Industrial/ Residential	1	35	0		3.3 (2)/(61)			6,13	No significant change from 1984
Localized Problem(s):	Suspended particulate matter is causing structures and materials corrosion resulting in complaints and increased cost for cleaning, maintenance and repairs of buildings and/or objects. Enforcement is planned for St. Mary's Cement.									
ST. THOMAS										
Total Suspended Particulate Matter	Industrial/ Residential	3	37-56	0		5.9 (12)/(202)			2,13,19	No significant change from 1984
Lead in Suspended Particulate Matter	Industrial/ Residential	1	.2			0 (0)/(54)			9	" "
Localized Problem(s):	Suspended particulate matter is causing structures and materials corrosion resulting in complaints and increased costs for cleaning, maintenance and repairs of buildings and/or other objects. Abatement is required to meet exising standards, guidelines or criteria for Canron Ltd. Further abatement requirements under development.									

LOCATION / Contaminant	1985 RESULTS: Classification of Station Locations	Number of Stations	Range of Annual Averages	Number of Stations Above Annual Criterion	% Data Above 1-Month Criterion	% Data Above 24-Hour Criterion	% Data Above 8-Hour Criterion	% Data Above 1-Hour Criterion	Major Source of Pollution (Code)	1985 PLANNED RESULTS
SARNIA										
Sulphur Dioxide	Commercial/ Residential	1	.011	0		0 (0)/(7882)		0 (0)/(331)	1, 5,10	No significant change from 1984
Nitrogen Dioxide	Commercial/ Residential	1	.019			0 (0)/(350)		0 (0)/(8272)	1, 5,16, 19	" "
Carbon Monoxide	Commercial/ Residential	1	.1				0 (0)/(1001)	0 (0)/(8012)	16,19	" "
Total Reduced Sulphur	Residential/ Commercial	1	.0004						5	" "
Soiling Index	Commercial	1	.25	0		0 (0)/(356)			8,16,19	" "
Ozone	Commercial	1	.023					.6 (47)/(8093)	14,20	" "
Total Suspended Particulate Matter	Commercial/ Residential	3	38-45	0		2.9 (5)/(172)			8,16,19	" "
	Residential	1	36	0		1.7 (1)/(58)			8,16,19	" "
Lead in Suspended Particulate Matter	Commercial	1	0.1			0 (0)/(57)			19	" "
Localized Problem(s):	Ozone is causing vegetation damage resulting in reduced production of agricultural crops, lumber and/or ornamental shrubs. Additional regulatory programs/policies are required.									

LOCATION / Contaminant	1985 RESULTS									1985 PLANNED RESULTS
	Classification of Station Locations	Number of Stations	Range of Annual Averages	Number of Stations Above Annual Criterion	% Data Above 1-Month Criterion	% Data Above 24-Hour Criterion	% Data Above 8-Hour Criterion	% Data Above 1-Hour Criterion	Major Source of Pollution (Code)	
SAULT STE. MARIE										
Sulphur Dioxide	Industrial/ Residential	1	.005	0		0 (0) (338)		0 (0) (8116)	2,10,	No significant change from 1984
Total Reduced Sulphur	Industrial/ Residential	1	12.5 ppb					6.2 (8) (130)		" "
Nitrogen Dioxide	Industrial/ Residential	1	.015			0 (0) (207)		.08 (4) (4982)	2,10,19	" "
Carbon Monoxide	Industrial/ Residential	1						0 (0) (7507)	2,10,19	" "
Soiling Index	Industrial/ Residential	1	.4	0		11.1 (35) (314)			2,10,19	" "
Total Suspended Particulate Matter	Industrial/ Residential	3	10-51	1		3.7 (5) (135)			10, 2,19	" "
Ozone	Industrial/ Residential	1	N/A	0				.03 (1) (3879)	20	" "
Lead in Suspended Particulate Matter	Industrial/ Residential	1	.2			0 (0) (80)			19	" "
Dustfall	Industrial/ Residential	10	3.4-10.4	6	35.4 (29) (82)				2, 4	" "
Localized Problem(s):	Dustfall from Algoma Steel complex is resulting in complaints from local citizens. Abatement is required to meet existing standards, guidelines or criteria.									

LOCATION / Contaminant	1985 RESULTS: Classification of Station Locations	Number of Stations	Range of Annual Averages	Number of Stations Above Annual Criterion	% Data Above 1-Month Criterion	% Data Above 24-Hour Criterion	% Data Above 8-Hour Criterion	% Data Above 1-Hour Criterion	Major Source of Pollution (Code)	1985 PLANNED RESULTS
SCARBOROUGH										
Sulphur Dioxide	Residential	2	.001-.003	0		0 (0)/(692)		0 (0)/(16515)	1, 8,10, 20	No significant change from 1984
Nitrogen Dioxide	Residential	1	.018			0 (0)/(348)		0 (0)/(8327)	19,20	" "
Carbon Monoxide	Residential	1	1.3				0 (0)/(8481)	0 (0)/(8481)	19	" "
Soiling Index	Residential	1	.34	0		0 (0)/(356)			8,19	" "
Ozone	Residential	1	.014					0 (0)/(8338)	14,20	" "
Lead in Suspended Particulate Matter	Residential	2	.1-.3			0 (0)/(221)			19	" "
Total Suspended Particulate Matter	Residential	2	34-53	0		4.0 (9)/(223)			8,16,19	" "
Dustfall	Residential	8	2.7-12.0	4	18.1 (17)/(94)				8,16,19	New station, 1984
	Residential/ Industrial	4	3.4-6.3	2	21.3 (10)/(47)				8,16,19	" "
Fluorides	Source Oriented	1	29		12.5 (1)/(8)				8	" "
SEARCHMOUNT										
Dustfall	Industrial/ Residential	1	5.0	1	18.2 (2)/(11)				4	No significant change from 1984

LOCATION / Contaminant	1985 RESULTS: Classification of Station Locations	Number of Stations	Range of Annual Averages	Number of Stations Above Annual Criterion	% Data Above 1-Month Criterion	% Data Above 24-Hour Criterion	% Data Above 8-Hour Criterion	% Data Above 1-Hour Criterion	Major Source of Pollution (Code)	1985 PLANNED RESULTS
SMOOTH ROCK FALLS										
Total Reduced Sulphur	Industrial/ Residential	--- Monitoring began in April 1986 ---							4	Monitoring expected to resume
STEPHEN TWP.										
Ozone	Rural	2	.026-.027					.4 (54) / (15457)	14,20	No significant change from 1984
Localized Problem(s):	Ozone is causing vegetation damage resulting in reduced production of agricultural crops, lumber, and/or ornamental shrubs. Additional regulatory programs/policies are required.									
STOUFFVILLE										
Sulphur Dioxide	Rural	1	.004	0		0 (0) / (217)		0 (0) / (5272)	10,20	No significant change from 1984
Nitrogen Dioxide	Rural	1	.012			0 (0) / (275)		0 (0) / (6593)	19,20	New station, 1984
Ozone	Rural	1	.023					.09 (8) / (8656)	14,20	No significant change from 1984
Dustfall	Rural	1	2.4	0	0 (0) / (12)				15,19	New station, 1984
Total Suspended Particulate Matter	Rural	1	35	0		1.7 (2) / (116)			15,19	No significant change from 1984

LOCATION / Contaminant	1985 RESULTS									1985 PLANNED RESULTS
	Classification of Station Locations	Number of Stations	Range of Annual Averages	Number of Stations Above Annual Criterion	% Data Above 1-Month Criterion	% Data Above 24-Hour Criterion	% Data Above 8-Hour Criterion	% Data Above 1-Hour Criterion	Major Source of Pollution (Code)	
SUDBURY										
Sulphur Dioxide	Industrial/ Residential/ Urban	10	.004-.010	0		.09		.3 (237) (79048)	3,10	No significant change from 1984
	Rural	2	.004-.005	0		0		.03 (4) (15988)	3	" "
Nitrogen Dioxide	Industrial/ Residential/ Urban	2	.007-.010			0 (0) (636)			3,10,19	
Carbon Monoxide	Industrial/ Residential/ Urban	2	.1-.4					0 (0) (15699)	3,10,19	" "
Ozone	Industrial/ Residential/ Urban	2	.013-.028	0				.3 (46) (13879)	20	" "
Total Suspended Particulate Matter	Industrial/ Residential/ Urban	3	26-29	0		1.6 (2) (128)			3,10	" "
Lead in Suspended Particulate Matter	Industrial/ Residential/ Urban	4	.1			0 (0) (153)			19	" "
Soiling Index	Industrial/ Residential/ Urban	4	.13-.19	0		.2 (2) (1092)			3, 4	" "

LOCATION / Contaminant	1985 RESULTS: Classification of Station Locations	Number of Stations	Range of Annual Averages	Number of Stations Above Annual Criterion	% Data Above 1-Month Criterion	% Data Above 24-Hour Criterion	% Data Above 8-Hour Criterion	% Data Above 1-Hour Criterion	Major Source of Pollution (Code)	1985 PLANNED RESULTS
SUDBURY (cont'd)										
Dustfall	Industrial/ Residential/ Urban	2	4.5-5.0	2	10.0 (2) / (20)				3,10	No significant change from 1984
Localized Problem(s):	Sulphur dioxide from Inco and Falconbridge is causing odours and vegetation damage, resulting in complaints from the public and reduced production of agricultural crops, lumber and/or ornamental shrubs. Enforcement is planned or under way.									
TERRACE BAY										
Total Reduced Sulphur	Source Oriented	1	1.4					0.7 (60) / (8635)	4	No significant change from 1984
Localized Problem(s):	Total reduced sulphur from Kimberley-Clark of Canada Ltd. is causing odours resulting in complaints, concern among local citizens and reduced recreational use. Enforcement is planned or under way.									
THOROLD										
Sulphur Dioxide	Source Oriented (Ont. Paper)	1	.001	0		0 (0) / (345)		.04 (3) / (8315)	4,10	Significant improvement over 1984
	Source Oriented (Exolon)	1	.017	0		1.1 (4) / (357)		0.8 (69) / (8543)	8,10	No significant change from 1984
Dustfall	Source Oriented (Ont. Paper)	2	3.9-7.7	1	33.3 (8) / (24)				4	" "

LOCATION / Contaminant	1985 RESULTS: Classification of Station Locations	Number of Stations	Range of Annual Averages	Number of Stations Above Annual Criterion	% Data Above 1-Month Criterion	% Data Above 24-Hour Criterion	% Data Above 8-Hour Criterion	% Data Above 1-Hour Criterion	Major Source of Pollution (Code)	1985 PLANNED RESULTS
THOROLD (cont'd)										
Total Suspended Particulate Matter	Source Oriented (Exolon)	1	106	1		39.3 (22)/(56)			8,13	No significant change from 1984
Total Reduced Sulphur	Source Oriented (Exolon)	1	2.9					2.8 (242)/(8652)	8	" "
Localized Problem(s):	Sulphur dioxide and dustfall from Ontario Paper and total suspended particulates, total reduced sulphur, and sulphur dioxide from Exolon are causing odours, vegetation damage, structures and materials corrosion, and nuisance effects. Impacts are complaints, reduced recreational use and increased costs for cleaning, maintenance and repairs of buildings and/or other objects. Abatement is under way and further measures are being investigated for Ontario Paper. Enforcement is planned for Exolon.									
THUNDER BAY										
Sulphur Dioxide	Commercial	1	.000	0		0 (0)/(308)		0 (0)/(7450)	1, 4	No significant change from 1984
	Residential	1	0	0		0 (0)/(350)		0 (0)/(8340)	1, 4	" "
Dustfall	Commercial	2	3.9	0	8.7 (2)/(23)				7,16	" "
	Residential	3	2.9-3.6	0	6.1 (2)/(33)				7,11	" "
	Industrial	2	3.3-5.2	1	13.6 (3)/(22)				4, 7,16	" "

LOCATION / Cintaminant	1985 RESULTS									1985 PLANNED RESULTS
	Classification of Station Locations	Number of Stations	Range of Annual Averages	Number of Stations Above Annual Criterion	% Data Above 1-Month Criterion	% Data Above 24-Hour Criterion	% Data Above 8-Hour Criterion	% Data Above 1-Hour Criterion	Major Source of Pollution (Code)	
THUNDER BAY (cont'd)										
Total Reduced Sulphur	Industrial	1	.8					0 (0)/(6822)	4	No significant change from 1984
Lead in Suspended Particulate Matter	Commercial	2	.1-.2			0 (0)/(116)			19	" "
Ozone	Residential	1	.016					0 (0)/(5491)	20	" "
Soiling Index	Residential	1	.13	0		1.5 (5)/(341)			8,16,19	" "
Total Suspended Particulate Matter	Commercial	2	32-36	0		0 (0)/(117)			7,16	" "
	Residential	2	23-27	0		0 (0)/(110)			7,16	" "
	Industrial	1	47	0		2.0 (1)/(49)			4,16	" "
Localized Problem(s):	Total reduced sulphur and dustfall from industry are causing odours and soiling resulting in complaints, concern among local citizens and reduced recreational use. Enforcement is planned or underway.									

LOCATION / Contaminant	1985 RESULTS: Classification of Station Locations	Number of Stations	Range of Annual Averages	Number of Stations Above Annual Criterion	% Data Above 1-Month Criterion	% Data Above 24-Hour Criterion	% Data Above 8-Hour Criterion	% Data Above 1-Hour Criterion	Major Source of Pollution (Code)	1985 PLANNED RESULTS
TIMMINS										
Dustfall	Rural/ Industrial	1	9.2	1	62.5 (5) (8)				4	No significant change from 1984
Total Suspended Particulate Matter	Residential/ Commercial	1	38	0		0 (0) (43)			16	New station, 1984
TORONTO										
Sulphur Dioxide	Commercial/ Residential	2	.003-.004	0		0 (0) (710)		0 (0) (16857)	1, 8,10, 20	No significant change from 1984
	Industrial/ Residential	1	.005	0		0 (0) (354)		0 (0) (8408)	1, 8,10, 20	" "
Nitrogen Dioxide	Commercial/ Residential	2	.023-.026			0 (0) (711)		0 (0) (16893)	19,20	" "
	Industrial/ Residential	1	.032			0 (0) (353)		0 (0) (8366)	19,20	" "
Carbon Monoxide	Commercial/ Residential	3	1.1-3.7				.2 (45) (24230)	.02 (4) (24230)	19	" "
	Industrial/ Residential	1	.9				0 (0) (7179)	0 (0) (7179)	19	" "
Soiling Index	Commercial/ Residential	2	.36-.49	0		1.1 (8) (703)			8,16,19	" "
	Industrial/ Residential	1	.36	0		.3 (1) (355)				" "

LOCATION / Contaminant	1985 RESULTS									1985 PLANNED RESULTS
	Classification of Station Locations	Number of Stations	Range of Annual Averages	Number of Stations Above Annual Criterion	% Data Above 1-Month Criterion	% Data Above 24-Hour Criterion	% Data Above 8-Hour Criterion	% Data Above 1-Hour Criterion	Major Source of Pollution (Code)	
TORONTO (cont'd)										
Ozone	Commercial/ Residential	2	.012-.016					.2 (37) (16917)	14,20	No significant change from 1984
	Industrial/ Residential	1	.017					.2 (18) (8337)	14,20	" "
Lead in Suspended Particulate Matter	Commercial/ Residential	2	.2-.4		0 (0) (22)	0 (0) (404)			19	" "
	Industrial/ Residential	5	.2-1.7		1.7 (1) (60)	2.1 (28) (1345)			3,19	" "
	Residential	3	.2-.4		0 (0) (36)	0 (0) (987)			3,19	" "
Total Suspended Particulate Matter	Commercial/ Residential	2	50-82	1		7.0 (33) (469)			8,11,19	" "
	Industrial/ Residential	5	47-64	2		7.5 (101) (1348)			3, 8,11	" "
	Residential	3	50-62	1		6.2 (62) (1008)			8,11,19	" "
Dustfall	Residential	10	2.9-8.2	3	16.0 (19) (119)				16,19	New station, 1984
	Commercial/ Residential	10	3.2-7.8	4	18.5 (20) (108)				16,19	" "

LOCATION / Contaminant	1985 RESULTS: Classification of Station Locations	Number of Stations	Range of Annual Averages	Number of Stations Above Annual Criterion	% Data Above 1-Month Criterion	% Data Above 24-Hour Criterion	% Data Above 8-Hour Criterion	% Data Above 1-Hour Criterion	Major Source of Pollution (Code)	1985 PLANNED RESULTS
TORONTO (cont'd)										
Dustfall	Industrial/ Residential	18	3.9-13.4	19	51.6 (113)/(219)				8,13,19	New station, 1984
	Source Oriented	6	4.6-15.9	5	53.5 (38)/(71)				8,19	" "
Fluorides	Source Oriented	3	25-116		30.3 (10)/(33)				6	" "
	Commercial/ Residential	2	21-24		0 (0)/(24)				16	" "
	Industrial/ Residential	1	22		0 (0)/(12)				16	" "
Localized Problem(s):	Hydrocarbons from Junction Triangle, lead from Bathurst/Front refiners and smelters, diesel fumes and noise from the Danforth/Coxwell TTC Yard, and amines from Keele/St. Clair meat packing plants are causing odours and may be causing health effects resulting in complaints and concern among local citizens. Additional regulatory programs/ policies are required for Junction Triangle. Abatement is required to meet existing standards, guidelines or criteria for the other local problem areas.									
WAWA										
Sulphur Dioxide *	Residential	1	.005	0		.6 (2)/(320)		.3 (24)/(7687)	2,10	No significant change from 1984
Ozone	--- Monitoring discontinued 1983 ---								5,20	" "

LOCATION / Contaminant	1985 RESULTS: Classification of Station Locations	Number of Stations	Range of Annual Averages	Number of Stations Above Annual Criterion	% Data Above 1-Month Criterion	% Data Above 24-Hour Criterion	% Data Above 8-Hour Criterion	% Data Above 1-Hour Criterion	Major Source of Pollution (Code)	1985 PLANNED RESULTS
WELLAND										
Dustfall	Source oriented	3	4.8-7.4	3	19.4 (7)/(36)				8,13	No significant change from 1984
Total Suspended Particulate Matter	Source oriented	1	48	0		3.6 (2)/(55)			8,13	" "
WINDSOR										
Sulphur Dioxide	Commercial	2	.007-.010	0		0 (0)/(693)		0 (0)/(16436)	1, 2, 8, 10	No significant change from 1984
	Industrial	2	.004-.009	0		0 (0)/(660)		0 (0)/(15850)	1, 2, 8, 10	" "
	Residential	2	.006-.009	0		0 (0)/(610)		0 (0)/(14868)	1, 2, 8, 10	" "
Nitrogen Dioxide	Commercial	1	.026			0 (0)/(357)		0 (0)/(8475)	5,16,19,	" "
Carbon Monoxide	Commercial	1	.5				0 (0)/(1017)	0 (0)/(8133)	8,19	" "
Soiling Index	Commercial	1	.41	0		.8 (3)/(359)			2,8,16, 19	" "
	Residential	1	.40	0		.6 (2)/(359)			2,8,16, 19	" "

LOCATION / Contaminant	1985 RESULTS: Classification of Station Locations	Number of Stations	Range of Annual Averages	Number of Stations Above Annual Criterion	% Data Above 1-Month Criterion	% Data Above 24-Hour Criterion	% Data Above 8-Hour Criterion	% Data Above 1-Hour Criterion	Major Source of Pollution (Code)	1985 PLANNED RESULTS
WINDSOR (cont'd)										
Ozone	Commercial	1	.020					.9 (77)/(8475)	14, 20	No significant change from 1984
Total Suspended Particulate Matter	Commercial	5	46-79	1		4.1 (22)/(531)			2, 8,13, 16,19	" "
	Residential	9	41-75	1		5.3 (31)/(588)			2, 8,13, 16,19	" "
	Industrial	3	73-90	3		19.1 (32)/(168)			2, 8,13, 19,20	" "
Lead in Suspended Particulate Matter	Commercial	2	.2			0 (0)/(382)			19	" "
	Residential	3	.1-.2			0 (0)/(127)			19	" "
	Industrial	2	.2			0 (0)/(115)			19	" "
Total Reduced Sulphur	Industrial	2	.001-.002						2,20	" "
Localized Problem(s):	Local sources of ozone, and suspended particulate matter and total reduced sulphur from Wayne County, Michigan, are causing concern for vegetation damage, health effects, structures and materials corrosion, and odours. Impacts are reduced production of agricultural crops, lumber and/or ornamental shrubs, complaints, concern among local citizens, and increased costs for cleaning, maintenance and repairs of buildings and/or other objects. Additional regulatory programs/policies are required for ozone. Enforcement action is planned or underway for Wayne County, Michigan. Improved control of particulates emissions is planned for the Ford Motor casting plant and Zalev Bros. scrap yard. Further odour abatement under study at Ford casting plant and Chrysler mini-van plant.									

LOCATION Contaminant	1985 RESULTS Classification of Station Locations	Number of Stations	Range of Annual Averages	Number of Stations Above Annual Criterion	% Data Above 1-Month Criterion	% Data Above 24-Hour Criterion	% Data Above 8-Hour Criterion	% Data Above 1-Hour Criterion	Major Source of Pollution (Code)	1985 PLANNED RESULTS
WINGHAM										
Total Suspended Particulate Matter	Residential	2	34-55	0		5.6 (3)/(54)				
YORK										
Dustfall	Residential	3	4.6-7.7	2	22.2 (8)/(36)				8,16,19	New station, 1984
	Source Oriented	2	5.1-11.8	1	41.7 (10)/(24)				6,19	" "

AIR QUALITY CRITERIA EXCEEDENCES

The chart below summarizes historical exceedences of air quality criteria.

	1983-84		1984-85		1985-86 Planned				1985-86 Actual	
	% Time Criterion was Exceeded	No. of Monitoring Stations	% Time Criterion was Exceeded	No. of Monitoring Stations	No. of Stations Expecting No Significant Change in Air Quality over 1984	No. of Stations Expecting Improved Air Quality	No. of Stations Expecting Deteriorated Air Quality	No. of Stations Without Projections	% Time Criterion was Exceeded	No. of Monitoring Stations
Dustfall (monthly criterion)	25.5	81	25.3	225	62	0	6	0	24.3	218
Total Suspended Particulates (24 hr. criterion)	3.7	137	6.6	146	132	2	0	1	6.0	143
Sulphur Dioxide (24 hr. criterion)	0.1	59	0.1	74	63	1	0	1	0.0	62
Lead in Particulate Matter (24 hr. criterion)	0.9	60	0.5	61	59	0	0	0	1.8	57
Total Reduced Sulphur (1 hr. criterion)	0.8	15	0.6	23	17	0	1	1	0.6	22
Soiling Index (24 hr. criterion)	2.1	22	2.9	22	22	0	0	0	1.4	23
Ozone (1 hr. criterion)	0.7	27	0.5	32	30	0	0	0	0.4	33
Carbon Monoxide (8 hr. criterion)	0.0	20	0.0	23	20	0	0	0	0.0	24
Nitrogen Dioxide (24 hr. criterion)	0.0	22	0.0	29	23	0	0	0	0.0	26

AIR QUALITY EVALUATION SUMMARY

The chart below summarizes the number and percentage of Ontario communities affected by different types of air emissions. (Communities may be affected by more than one type of emission source - a total of 86 communities have been assessed.)

	1983-84	1984-85	1985-86 Planned*	1985-86 Actual
No. of communities with air quality affected by industrial emissions	65 (90%)	72 (86%)	60 (83%)	72 (84%)
No. of communities with air quality affected by vehicle emissions	34 (47%)	42 (50%)	34 (47%)	41 (48%)
No. of communities with air quality affected by space heating emissions	25 (35%)	27 (32%)	25 (35%)	27 (31%)
No. of communities with air quality affected by urban and construction activity	11 (15%)	24 (29%)	11 (15%)	26 (30%)
No. of communities with air quality affected by long range transport or transboundary pollution	30 (42%)	31 (37%)	30 (42%)	32 (37%)
No. of communities with air quality affected by photochemical reactions in the atmosphere	17 (24%)	24 (29%)	17 (24%)	25 (29%)

* A total of 72 communities were assessed for 1983-84 Actuals and 84 communities for 1984-85 Actuals.

	1983-84	1984-85	1985-86 Planned	1985-86 Actual
No. of communities with air quality affected by agricultural activities	1 (1%)	2 (2%)	1 (1%)	2 (2%)
No. of communities with air quality affected by fugitive emissions	5 (7%)	18 (21%)	5 (7%)	18 (21%)
No. of communities with air quality affected by incinerator emissions	2 (3%)	3 (4%)	2 (3%)	3 (4%)

APPENDIX J

INVENTORY OF LANDFILL SITES RECEIVING MUNICIPAL WASTES
AND WHICH HAVE BEEN IDENTIFIED AS HAVING PROBLEMS

INVENTORY OF WASTE DISPOSAL SITES OPERATED BY CORPORATIONS FOR THEIR OWN NON-HAZARDOUS WASTES WITH GROUNDWATER, SURFACE WATER, GAS CONTROL OR SITE MANAGEMENT PROBLEMS

Name of Site and Location	Problem(s) experienced A) groundwater pollution B) surface water pollution C) gas migration D) other	Significant effects (if any) associated with the waste site problem(s) 1) private or municipal water supply contamination 2) surface water contamination problems 3) gas hazards 4) nuisance effects and interference with the use of neighbouring property (smoke, noise, aesthetics, litter, rats etc.)	Remedial measures undertaken to correct the problem A) study B) upgrading C) none D) other Year when problem correction will be completed
NORTHWESTERN REGION			
Longlac, Kimberly-Clark	A, B	2	B, study in 1986
Exton, Kimberly-Clark	B, uncontrolled site	2	B, upgrading in 1987 D, certification in 1988
Longlac, Weldwood	A, B, D closure	2	A, closure in 1987
Dryden, Great Lakes Forest Products	B, leachate break-out D, steep face	2, contamination of local drainage system	A
Fort Frances, Boise Cascade	B, leachate break-out D, steep face	2, contamination of local drainage system	D, site to be closed and rehabilitated, new site in 1987

Name of Site and Location	Problem(s) experienced	Significant effects (if any) associated with the waste site problem(s)	Remedial measures undertaken to correct the problem
NORTHEASTERN REGION Kendall Twp., Lot 22 Con. 10, (Levesque Lumber)	A, site management	2, airborne particulate	
Kendall Twp., Lot 11 Con. 8, (Claude Villeneuve)	D, site management	Lack of proper cover	Ongoing
Teepy Twp., Abitibi-Price	A	2	D, close site 1986
Bistal Twp., Mallette Lumber	D, site management	Lack of cover	Wood waste no longer being landfilled
Bistal Twp., Waferboard	A, site management	2, lack of cover	" " Study 1986
O'Brien, Spruce Falls	A, " "	2, aesthetics	Upgrade by Control Order, year unknown
McRea Twp., Isabelle Bros.	A, " "	2, aesthetics	None raised in wood waste report waiting for recommendations
Alban Sawmill, G.W. Martin Forest Prod.	B possible		A
McDowell Twp., Domtar (White River)	D, burning, C of A violations	4, smoke, aesthetics	D, prosecution 1986
Haileybury, Rexwood Products	B, D, periodic fires	4, smoke	D, site closure

Name of Site and Location	Problem(s) experienced	Significant effects (if any) associated with the waste site problem(s)	Remedial measures undertaken to correct the problem
Cobalt, Agnico Eagle Mines	D, waste not covered	4	D, site closure
Normick Person Inc., Lots 19-20 Conc. 1	B	2	A, 1986
Chapleau, Chapleau Lumber	D, filling outside approved area	4, capacity	B, upgrading 1986
SOUTHWESTERN REGION K & E	D, odour, litter	4, periodic litter and odours	A, 1986
Zorra Twp., Oxford City - Canada Cement Lafarge	A, B, minor on-site		A, 1986
Unitec	B	4, seepage from site	A, 1986
WEST CENTRAL REGION Welland, Atlas Steel	B, D, capping of non-active areas required	2,4 aesthetics	A, 1987 B, 1987
Niagara Falls, Norton Company	B, C, site closure planned	2,4 aesthetics	A, 1986 C
Brantford, Bell City Foundry	D, aesthetics	4	D, cover or removal 1987
CENTRAL REGION Monmouth, Clapow Mill	No assessment to date		

Name of Site and Location	Problem(s) experienced	Significant effects (if any) associated with the waste site problem(s)	Remedial measures undertaken to correct the problem
Monmouth, Wilberforce Veneer	)) No assessment to date)		
Harcourt, Martin Lumber	)		
SOUTHEASTERN REGION Celanese - C of A A-370809	B, D, odours	2, 4 odours	Prosecution & revision of C of A conditions - 1986-87
Domtar Packaging Inc. C of A A-360203	D, operational - use of site for domestic garbage from lunch rooms A, under investigation		Operational problems addressed (1981-82) Groundwater monitoring program to be implemented 1986-87

INVENTORY OF WASTE DISPOSAL SITES OPERATED BY THE MINISTRY OF NATURAL RESOURCES
WITH GROUNDWATER, SURFACE WATER, GAS CONTROL OR SITE MANAGEMENT PROBLEMS

Name of Site and Location	Problem(s) experienced A) groundwater pollution B) surface water pollution C) gas migration D) other	Significant effects (if any) associated with the waste site problem(s) 1) private or municipal water supply contamination 2) surface water contamination problems 3) gas hazards 4) nuisance effects and interference with the use of neighbouring property (smoke, noise, aesthetics, litter, rats etc.)	Remedial measures undertaken to correct the problem A) study B) upgrading C) none D) other Year when problem correction will be completed
NORTHWESTERN REGION Chipman Lake	D, frequency of maintenance	4, smoke, litter	D, enforcement in 1986
Springwater Lake	" "	"	"
Klote Lake	" "	"	"
Howcum Lake	" "	"	"
Trout Lake	" "	"	"
McKay Lake	" "	"	"

Name of Site and Location	Problem(s) experienced	Significant effects (if any) associated with the waste site problem(s)	Remedial measures undertaken to correct the problem
Wintering River	D, frequency of maintenance	4, smoke, litter	D, enforcement in 1986
Castlebar Lake	" "	"	"
Pagwa River	" "	"	"
Paint Lake	" "	"	"
Orient Bay	" "	"	"
Auden	" "	"	"
Polly Lake	" "	"	"
Pamela Lake	" "	"	"
Wildgoose Lake	" "	"	"
Jellicoe	" "	"	"

Name of Site and Location	Problem(s) experienced	Significant effects (if any) associated with the waste site problem(s)	Remedial measures undertaken to correct the problem
Lyon Twp.	D, frequency of maintenance	4, smoker, litter	D, enforcement in 1986
Stirling Twp.	D, "	"	"
Arland	D, "	"	"
MacDiamid	D, "	"	"
NORTHEASTERN REGION Croft Twp. A-7034002	D, smoke	4	D, closure 1986-87
Pringle Twp. A-712190	A	2	D, closure 1987-88
East Mills A-7104502	D	4	D, relocate - 1986-87
Wallbridge Twp. A-7252402	D, drainage problem	2	B, upgrading
Fenwick Twp.	D, upgrading	4, smoke, litter	B, 1986-87
Striker Twp.	D, upgrading, capacity	4, litter, aesthetics	B, 1986-87

Name of Site and Location	Problem(s) experienced	Significant effects (if any) associated with the waste site problem(s)	Remedial measures undertaken to correct the problem
Jack Twp., Gogama	D, site management		
Lac Ste. Therese	D, "		
Constance Lake	D, "		
Bigwood Twp.	D, upgrading	4	B
Trout Lake, Estaire	D, "	4	D, expansion - doing Class EA
Aavllard Twp.	D, upgrading, capacity	4, smoke, litter	B, 1986-87
West Twp.	D, upgrading, housekeeping	4, litter, septage odour	B, "
SOUTHWESTERN REGION No sites			
WEST CENTRAL No sites			
CENTRAL REGION Bronte Park, Oakville	Leachate with high Ph from man-made berms		Leachate collection system and Ph control
SOUTHEASTERN REGION No problems			

INVENTORY OF MUNICIPALLY OR PRIVATELY OPERATED WASTE DISPOSAL SITES WITH GROUNDWATER, SURFACE WATER, GAS CONTROL OR SITE MANAGEMENT PROBLEMS

Name of Site and Location	Problem(s) experienced A) groundwater pollution B) surface water pollution C) gas migration D) other	Significant effects (if any) associated with the waste site problem(s) 1) private or municipal water supply contamination 2) surface water contamination problems 3) gas hazards 4) nuisance effects and interference with the use of neighbouring property (smoke, noise, aesthetics, litter, rats etc.)	Remedial measures undertaken to correct the problem A) study B) upgrading C) none D) other Year when problem correction will be completed
NORTHWESTERN REGION Manitouwadge	D, development encroaching on landfill	4, nuisance, occasional burning, aesthetics	A, study in 1986 D, new site in 1986
Marathon	" "	" "	A, study in 1986 D, new site planned 1987
Geraldton	D, method of operation	4	D, change methods, 1986
Longlac	D, frequency of maintenance	4	D, enforcement of standards 1986
Keewatin	D	4	A, waste management master plan underway 1986

Name of Site and Location	Problem(s) experienced	Significant effects (if any) associated with the waste site problem(s)	Remedial measures undertaken to correct the problem
Kenora	D	4	A, waste management master plan underway 1986
NORTHEASTERN REGION Massey, Town	D, improper cover, burning	4	B
Sudbury, RMOS	D		A
Assiginack, Manitoulin	D		A
Blind River	D, upgrading, general housekeeping	4	B, 1986
Sault Ste. Marie, Cherokee	A, B	1, 2	D, EA B, 1987
Perry Twp., A-522503	D, capacity	4	D, new site 1986-87
North Bay, A-530101	A, B	2, 4 birds	A, closure
McDougall Twp., MCS Site	A	1, possible 2	A, consultants report
Pedley Twp., Labelle Site	D, wastes off property	4	D, site expansion 1986-87

Name of Site and Location	Problem(s) experienced	Significant effects (if any) associated with the waste site problem(s)	Remedial measures undertaken to correct the problem
Elber Twp., Mattice	Site management	4	
Kendall Twp., Hearst	Site management	4	
Unsurveyed Cairo Twp., Mattachewan	Site management		
Hillard Twp., Thornloe	Site management		
Mivitie Twp. Claim 1261 Larder Lake	Site management	4	
Wicksteed Twp., Hornepayne	Site management		
O'Brien, Kapuskasing	Site management	4	
Fauquier, Moonbeam	Site management	4, 2	
Idington Twp., Opasatika	Site management		
Delord Twp., Timmins	Site management	2	

Name of Site and Location	Problem(s) experienced	Significant effects (if any) associated with the waste site problem(s)	Remedial measures undertaken to correct the problem
Glackmeyer Twp., Cochrane		2	
Calvert Twp., Iroquois Falls	Filled greater than approved area	2	
Williamson Twp., Val Rita	Site management		
Cockburn, Manitoulin	D, upgrading of site		D, property dispute by natives
Little Current, Manitoulin	D, site at capacity	4, smoke	Charges laid, new site study
Tarbutt Twp.	D, upgrading, general housekeeping	4	B, 1986
Melwel Lodge	D, upgrading, closure	4	B, 1986
MacDonald et al Twp.	D, upgrading, general housekeeping	4	D, 1986
SOUTHWESTERN REGION West Nissouri Twp., Lot 21, Con. T	Upgrading in accordance with regulations	4, aesthetics, smoke	Recommend closure
Neustadt Village A-261001 D + Lot 3 Conc. 14	D, routine compaction & cover required	4, smoke, aesthetics - litter	B, upgrading

Name of Site and Location	Problem(s) experienced	Significant effects (if any) associated with the waste site problem(s)	Remedial measures undertaken to correct the problem
Collingwood Twp., A-261401 P.E.Lot 26, Con. 10	D, routine compaction & cover required	4, aesthetics,	A, B, site study under way 1986
Forest	D, closure required during summer	4, smoke	D, closure during summer
Sarnia	B	4, leachate on ground	D, leachate collector under construction
Grand Bend	D, off-site migration of leachate	1, possible	D, sampling
Aldborough Twp., Rodney	D, site mismanagement	4, smoke, aesthetics	D, 1986
Essex Landfill #2	A, B	2	D, collection of leachate 1987
Essex Landfill #1	B	2	A, D collection of leachate
Essex Landfill #3		2	D, ongoing dyke maintenance
Romney			D, additional studies under way 1986
City of Stratford	B	2	Upgrading leachate collector

Name of Site and Location	Problem(s) experienced	Significant effects (if any) associated with the waste site problem(s)	Remedial measures undertaken to correct the problem
Town of Listowel	Upgrading in accordance with regulations	4, aesthetics, litter, smoke	Frequent routine inspections
Township of Wallace	" " "	4, aesthetics, lack of cover	Frequent inspections
Township of Logan	" " "	" " "	" "
Township of Downie	" " "	4, aesthetics, litter, smoke	" "
Town of Tillsonburg	B	2	Site closure planned
Township of Delaware	Upgrading or closure	4, aesthetics, smoke	Site closure recommended
Township of Mosa	Upgrading in accordance with regulations	4, aesthetics, lack of cover	Frequent inspections
Township of McGillivray	" " "	" " "	" "
Township of Blanshard	" " "	4, aesthetics, smoke	" "
Township Amabel, A-271701	D, routine compaction and cover required	4, aesthetics, litter, smoke	A, B site study underway

Name of Site and Location	Problem(s) experienced	Significant effects (if any) associated with the waste site problem(s)	Remedial measures undertaken to correct the problem
Township Goderich, A-161302 Pt. Lot 13+14 Huron Rd. Conc.	B, leachate seepage into stream	2	A, B closure plan for existing area to be completed
Town of Wingham, A-16052 Lot 39 Con. 12	D, routine compaction and cover required	4, aesthetics, litter	A, B site study underway
WEST CENTRAL REGION Waterloo - Erb Street	A, B	2	A, B ongoing until site closes
Cambridge - Savage St.	A, B	2	A, B " " " "
Puslinch	A, B	2,4,1 (possibly)	A, B " " " "
Central Wellington	A, B	2,4	B " " " "
Minto	A		A, ongoing (1987)
Mono	A		A, B " "
Brantford Twp.	A, leachate moving off-site	2, leachate may enter small stream	A, consultant monitoring stream B, Twp. purchased buffer land
Delhi	D, surface water ponding	2, water ponding in depression adjacent to landfill	B, municipal drain under construction 1986. Site to close Dec. 1986

Name of Site and Location	Problem(s) experienced	Significant effects (if any) associated with the waste site problem(s)	Remedial measures undertaken to correct the problem
Fort Erie, Bridge St.	A, potential listed in NRTC report. No effects found to date		Ongoing
Grimsby, Park Rd.	B, D litter	2, 4	B, leachate control system to be installed 1986. Improved litter control 1986
Niagara Falls, Mountain Road	D, litter A, at monitoring wells	4	A, 1987-88 B, 1988
Port Colborne, Elm Street	D, litter	4	B, 1986
Town of Paris	B, leachate break-out at dam	4, breakthrough contained on buffer land	C, Town will apply cover and construct berm to divert drainage 1986
Waterloo-Woolwich	A	1	A, site will be closing with controls on site
CENTRAL REGION Tiny Twp., Pauzé waste disposal site, A-253101	A	1	A, B groundwater monitoring, individual replacement of water systems, site closure - 1987
Stayner, Town A-250801	D, landfilling beyond approval limits	4, aesthetics	D, expansion application is pending, 1987
Asphodel Twp., A-340501	D, upgrading	4	B, 1986

Name of Site and Location	Problem(s) experienced	Significant effects (if any) associated with the waste site problem(s)	Remedial measures undertaken to correct the problem
Britannia Landfill, A-220112 Region of Peel, Mississauga	D, blowing litter		A, review of subdivision and APA
Burlington Landfill Site, A-210102	D, cover material and litter B, leachate breakouts A, potential	2, occassional	B, ongoing
Harvey Twp., A-341304 Lakehurst	D, lack of capacity		D, closure - 1986
Douro Twp., A-340902	D, approaching capacity		A
Seymour Twp., A-312401	A		D, closure of site planned for late 1985
Cobourg, Town A-311702 Haldimand Twp.	A, B	2	A
Peterborough, City A-341508 Otonabee Twp.	A, B		A
Manvers Twp., A-321801	D, lack of capacity		A
Hamilton Twp., A-311802 Bewdley	D, approaching capacity no groundwater monitors		B, 1986
Newcastle - Hale Regional Reclaiming Site	B, leachate gaining access to surface water	2 4, aesthetic	B, leachate collection installed 1985 D, site to be closed in 1987

Name of Site and Location	Problem(s) experienced	Significant effects (if any) associated with the waste site problem(s)	Remedial measures undertaken to correct the problem
Pickering-Brock West Landfill site	C, landfill gas venting to atmosphere	4, gas causing off-site odours	Gas collection & incineration to be installed 1986
Albion Landfill	D, site nearing capacity		
Whitchurch-Stouffville	A	Groundwater deterioration	Monitoring, replace wells with municipal water
Davis Lake - Lutterworth	B	2	Closure, 1985
Pinelands - Muskoka Lakes	A, B	2	A, leachate control system being installed 1986
Bracebridge	A	1	A
Gravenhurst	B	2	A
Twp. of Tecumseth, A-253001 S. Simcoe Sanitation W.D.S.	D, landfilling beyond approval limit	4	D, operation to cease or apply for expansion application
Village of Elmvale, A-252007	D, poor site management	4	D, operating plan requested 1987
Twp. of Flos, A-252003	D, poor site management	4	D, operating plan requested 1987

Name of Site and Location	Problem(s) experienced	Significant effects (if any) associated with the waste site problem(s)	Remedial measures undertaken to correct the problem
SOUTHEASTERN REGION West Carleton Twp., dump A-461002 (Private)	A, B	2	A, 1987
Nepean, City Site A-461303	A	Leachate moving off-site but not offsetting neighbouring properties	A, 1987
W. Carleton Twp., Lot 21 Conc. 6, A-460601	D, poor operation, burning	4	D, meet with municipality to have problem corrected 1986
Charlottenburgh Twp., A-481004	D, burning	4, smoke	B, legal action
Drummond Twp., Lot 15, Conc. 5 A-451101	D, poor operation, odours	4	D, hydrological study to be done, 1987
Lanark Twp., Lot 16 Conc. 4, 1-451302	D, poor operation, close to surface water, inadequate cover	4	D, operating plan to be prepared, 1987
Ramsay Twp., Lot 6, Conc. 4, A-451702	D, poor site	4	D, part of master plan
S. Sherbrooke Twp., Lot 17, Conc. 2, A-451805	D, inadequate cover, close to surface water	4	D, Council has been asked to find another site, 1987
S. Sherbrooke Twp., Lot 10, Conc. 10, A-451806	D, inadequate cover	4	D, Council has been asked to improve operation, 1987
Jones Twp., Lot 128, Conc. RBN, A-413404	D, burning	4	D, meet with municipality to have problem corrected, 1987

Name of Site and Location	Problem(s) experienced	Significant effects (if any) associated with the waste site problem(s)	Remedial measures undertaken to correct the problem
Sherwood Twp., Lot 21, Conc. 8, A-413403	D, poor site, inadequate cover	4	D, meet with municipality to have problem corrected, 1987
Westmeath Twp., Lot 30, Conc. NEF, A-413602	D, poor site, burning, odours	4	D, " " "
Wilberforce Twp., Lot 13, Conc. 9, A-413703	D, poor site	4	D, part of master plan, 1987
Bathurst Twp., Lot 20, Conc. 3, A-450601	D, burning	4	D, meet with municipality to have problem corrected, 1987
McNab Twp., Lot 18, Conc. 6 A-412605	D, poor operation, burning, odours	4	D, " " "
Raglan Twp., Lot 12, Conc. 6, A-413001	D, " " " "	4	D, " " 1986
Richards Twp., Lot 12, Conc. 6, A-412302	D, " " " "	4	D, " " "
Richards Twp., Lot 29, Conc. 3, A-412303	D, " " " "	4	D, " " 1987
Sebastopol Twp., Lot 64, Conc. RCN, A-413304	D, " " " "	4	A, part of master plan, 1987
Sherwood Twp., Lot 6, Conc. A., A-413401	D, " " " "	4	D, meet with municipality to have problem corrected, 1986

Name of Site and Location	Problem(s) experienced	Significant effects (if any) associated with the waste site problem(s)	Remedial measures undertaken to correct the problem
McNab Twp., Lot 18, Conc. 6, A-412605	D, burning, odours	4	D, meet with municipality to have problem corrected, 1987
Admaston Twp., Lot 15, Conc. 5, A-411301	B	2	A, study and present case to municipality, 1987
Alice & Fraser Twp., Lot 23, Conc. 1, A-411601	A, B	2	A, 1987
Bromley Twp., Lot 5, Conc. 10, A-411802	D, odours, burning, insufficient cover material	4	A, part of master plan, 1987
Bromley Twp., Lot 5, Conc. 10, A-411801	D, poor site & operation, burning	4	A, part of master plan, 1987
Augusta Twp. Maynard WDS C of A, A-441003	A, B	2	A, EA Study, 1988
Brockville, City C of A, A-440101	B	2, 1	A, B 1990
Kingston Twp., A-380801	D, at capacity		A, area waste study with the City of Kingston
Madoc Village C of A, A-362002	A, B		Area waste disposal study
Hallowell Twp. C of A, A-350601	D, nearing capacity, operating problems		D, applying for emergency C of A

Name of Site and Location	Problem(s) experienced	Significant effects (if any) associated with the waste site problem(s)	Remedial measures undertaken to correct the problem
Cambridge Township, A-471104	D, burning	4, smoke	B, upgrading
St. Isidore Village, A-471802	D, "	4, smoke	A, area study
Winchester Village, A-482101	D, "	4, smoke	B, upgrading
Lancaster Township, A-481403	D, "	4, smoke	B, upgrading
Gloucester, City Gloucester Federal Site	A	1	A, study
Nepean, City Trail Road	B	2	A, study
City of Ottawa, Ridge Road	B	2	A, study
City of Ottawa, Riverside Drive	C	3	A, study

INVENTORY OF INACTIVE WASTE DISPOSAL SITES WITH GROUNDWATER, SURFACE WATER, GAS CONTROL OR SITE MANAGEMENT PROBLEMS

1985-86 Actual

Name of Site and Location	Problem(s) experienced A) groundwater pollution B) surface water pollution C) gas migration D) other	Significant effects (if any) associated with the waste site problem(s) 1) private or municipal water supply contamination 2) surface water contamination problems 3) gas hazards 4) nuisance effects and interference with the use of neighbouring property (smoke, noise, aesthetics, litter, rats etc.)	Remedial measures undertaken to correct the problem A) study B) upgrading C) none D) other Year when problem correction will be completed
NORTHWESTERN REGION Great Lakes Forest Products Dryden Mercury Site	A, B occasional detectable mercury in test wells and leachate		A, study underway in 1986 B, test holes to be improved
Great Lakes Forest Products Colenso Site, Red Lake Road	B, leachate breakout	2, runoff to local creek	D, site to be rehabilitated in 1987-88
NORTHEASTERN REGION No problems			
SOUTHWESTERN REGION London, S.E. - 3	B	2	B, leachate collection system 1986
London Twp.	B	2	D, remedial work by Twp. 1986-87

Name of Site and Location	Problem(s) experienced	Significant effects (if any) associated with the waste site problem(s).	Remedial measures undertaken to correct the problem
London, Commissioner's Rd.	B	2	B, leachate collection system 1986
London, Elmwood Ave.	B	4, aesthetics, erosion	A, B 1987
London, Euston	B	2	B, 1986
London, River Rd.	B	2	B, 1987
London, East St.	D, aesthetics	4	A, B 1987
Windsor, Malden Road	B	2, minor	A
Windsor, Easterly	B	2, minor	A
WEST CENTRAL REGION Kitchener, Ottawa St.	C	3	Lawsuit underway
St. Catharines, Pelham Road	B	2	A, 1986
CENTRAL REGION Acton, 7062	B potential C potential	3, possible	A

Name of Site and Location	Problem(s) experienced	Significant effects (if any) associated with the waste site problem(s)	Remedial measures undertaken to correct the problem
Oakville, A-210402	A potential C potential	2	A, B (proposed) C
Knob Hill Farms Pallet Dev. (Cannox) Mississauga	C, houses built on waste site		A
Pleasant View Farms Pallet Dev. (Cannox) 7067 - Mississauga	proposed development		A
Burlington, A-210103 Bayview Park	A, B off-site E, on-site	2, 3	A, ongoing monitoring B
Oakville, 7048	A, B high potential - off-site C, on-site and off-site	3, gas hazards (high)	A, ongoing
Nelson, Otonabee Twp.	A, B	1, 2	B, alternate water provided D, monitoring
Peterborough Airport, North Monaghan	C	3 venting system installed for main air terminal	A, other buildings being studied
Scarborough, Beare Road LFS	A	4	B, 1986
Scarborough, Morningside LFS	C	3	B, 1985
Aurora, WMI York San #1 site	A C	1, private well supply contamination	Replace with municipal water supply

* Name of Site and Location	Problem(s) experienced	Significant effects (if any) associated with the waste site problem(s)	Remedial measures undertaken to correct the problem
Markham, Sabisten landfill site	C	3, gas hazard to adjacent homes	gas collection and burner installed in 1985
Mississauga, A-220104 Scott Pit	A, B off-site C, on-site	2, 3 hazard to new development 4, dust	A, 1985-88 B
Oakville, 9th Line Site Town of Oakville	B, A potential		A
Mississauga, A-220103 North Sheridan Site	C potential, nearby development		A
Brampton, 7027 Professor's Lake Site	C potential, nearby development		D, periodic checking
Brampton, Chingacousy Site	A, B potential		A, B
Vaughan, Vaughan Landfill Site	A, groundwater pollution	Groundwater deteriorating	Purge well system installed in 1985
Oshawa, Industrial Disposal Site	B, surface water pollution	Leachate gaining access to surface water	Leachate collection system installed in Aug. 1985. Leachate being discharged to sanitary sewer. No problem.
Etobicoke, Disco Road LFS	B	2	B, 1985
Oakville Yacht Club Site, 7050	C potential, new townhouses nearby		D, periodic checking

Name of Site and Location	Problem(s) experienced	Significant effects (if any) associated with the waste site problem(s)	Remedial measures undertaken to correct the problem
Burlington, Canada Printing	B, A potential		B
Oakville, Union Carbide Site	B A potential		B
Mississauga, DHI Site (Streetsville)	D, unsightly		D, clean up discussions
Port Credit, A-220107, A-220108 Texaco Refinery	D, residual wastes proposed development		A
Acton/Halton Hills, A-210210 Beardmore Tannery	B A potential		A, partial closing of tannery
Oakville, Shell Refinery	D, residual wastes proposed development		A
SOUTHEASTERN REGION Cornwall	D, closure	4, odours	Closure 1987
Ottawa, Riverside Drive	C	3	A, 1987
West Carleton Township Lot 21, Conc. 6, A-461005	D, poor operation burning	4	D, meet with municipality to have problem corrected 1986, site to be closed in 1987
Radcliffe Township Lot 10, Conc. 6, A-412901	D, poor site and operation	4	D, site to be closed in 1987

APPENDIX K

INVENTORY OF LIQUID INDUSTRIAL WASTE SITES, FACILITIES, TREATMENT CENTRES AND PLANTS

1985-86

A. INCINERATORS

Syntath, St. Catharines
Tricil, Corunna*
Queensway General Hospital, Etobicoke
St. James Cemetary & Crematorium, Toronto
York Central Hospital, Richmond Hill
Scarborough Centenary Hospital, Scarborough

B. DIRECT LANDFILL

Abitibi-Price, Halton Hills
City of Brantford
City of Guelph
City of Paris
City of Welland
Dow Chemical of Canada Ltd., Sarnia
Imperial Oil Ltd., Sarnia
Polysar Ltd., Sarnia
Township of Hamilton
Tricil Ltd. (Landfill), Corunna

C. SEWAGE TREATMENT PLANTS

Ashbridges Bay, Toronto
Baker Road STP, Grimsby
Barry's Bay, STP

C. SEWAGE TREATMENT PLANTS (Continued)

Belleville, STP
Bracebridge, WPCP
Chrysler Canada Ltd., Windsor
Clarkson, Mississauga, WPCP
Cobourg #1, WPCP
Cobourg #2, WPCP
Corbett Creek, Whitby WPCP
Cornwall, WPCP
Dofasco, Hamilton
Duffin Creek STP, Pickering
East York Plant, Toronto
Esso, Sarnia
Gananoque Lagoon, PUC
General Motors, London
General Motors, Windsor
Hamilton Municipal Plant
Harmony Creek, Oshawa
Humber Plant, Toronto
Kitchener, WPCP
Niagara WPCP #1, (Regional)
Oakville STP
Peterborough, WPCP
Petro Canada, Oakville
Petrolia, WPCP
Polysar Ltd., Sarnia
Port Dalhousie, St. Catharines, WPCP
Port Darlington Bowmanville, WPCP

* Facility causing one or more of the following problems: surface or groundwater supply contamination, localized aquatic ecosystem impacts or odours.

C. SEWAGE TREATMENT PLANTS (Continued)

Port Weller, Thorold, WPCP
Stelco, Hamilton
Trenton, WPCP
Unitec Inc., Sarnia*
Welland WPCP

D. RECLAIMERS/REUSERS

Aimco Solrec, Milton
Anachemia Solvents, Mississauga
Apco Industries, Toronto
B and B Waste Recycling and Disposal, Gloucester
Canadian Oil Co., Toronto*
Canam, Breslau*
CanAm Oil Services, Toronto
CanAm Oil/Motor City, Windsor
Canflow Services, Sarnia*
Denison Mines, Elliot Lake
Dofasco, Hamilton
Energy Engineering, Bolton
Entropex Corporation, Sarnia
Garden Chemical, Toronto
Hevmet Recovery, Port Colborne
Industrial Chemical Refiners, Toronto
Johnson Matthey, Brampton
Mets Chemical, Scarborough
Petro Canada, Hamilton
Quantex Chemical, Kitchener
Retek Resource Recovery Inc., Brantford
Rio Algom, Elliot Lake
Scanlube Oils, Cambridge
Stelco, Hamilton
Texaco Canada Inc., Jarvis
Thomscan Industrial Services Inc., Mississauga

D. RECLAIMERS/REUSERS (Continued)

Varnicolour Chemical Ltd., Elmira*
Woodington Systems, Thorold
Van Waters & Rogers, Etobicoke

E. EXPORT

Americal Tank Service, Ferndale, Michigan
American Resource Recovery, Memphis, Tennessee
Canflow International, Detroit, Michigan
Chemical Recovery Systems, Romulus, Michigan
Chem-Met Services Division, Wyandotte, Michigan
Cimetere Notre Dame Des Neige, Montreal
Commercial Incineration, Cleveland, Ohio
Dearborn Refining, Dearborn, Michigan
Decom, Gatineau, Quebec
Environmental Waste Control Inc., Inkster, Michigan
Frontier Chem, New York
General Motors, Quebec
General Oil Co. Inc., Detroit, Michigan
Kinetic Ecological Res., Niksu Alberta
Maumee Refinery, Toledo, Ohio
Michigan Disposal Inc., Dearborn, Michigan
Nelson Industrial Services, Detroit
Norlite Corporation, Cohoes, New York
Petro-Chem Processing, Detroit, Michigan
Rabco Petroleum, Michigan
Service Central De Reservoirs, Quebec
Stablex Canada Inc., Ste. Therese Quebec
Stenberg Bros., Bark River, Michigan
Systech Corp., Ohio
Systech Corp., Fredonia, Kansas
Tredi, France
Tricil Ltd., Ville Ste. Catherine, Quebec
Uniroyal, Edmonton, Alberta

E. EXPORT (Continued)

Waste Acid Services, Michigan
Wayne Disposal, Dearborn, Michigan

F. TRANSFER STATIONS

Canam Oil, Windsor
Cantro Oil Recyclers, Windsor
CPW Disposal (Chem-King Inc.), Twp. of Vespra*
Diversey, Mississauga
Dofasco, Hamilton
Jim's Trucking, Welland
Mac's Liquid Disposal, London
MOE, Huron St. Vault, London

F. TRANSFER STATIONS (Continued)

Mosaic Chemical Corp., Mississauga
O. E. MacDougall Liquid Waste, Brockville*
Philip Enterprises, Hamilton
PPG Industries Ltd.
P. & E. Oil Recyclers, Petrolia
Reechem Processing Ltd., St. Catharines
Safety Kleen, Sudbury*
Syntath Ltd., Thorold
Thorco, Scarborough
Toronto Hydro
Tricil Ltd., Mississauga
Tricil Ltd., Thorold
Universal Pneumatic, Niagara Falls
University of Toronto
University of Western Ontario, London

APPENDIX L

SOURCE SEPARATION PROJECTS FUNDED BY MOE IN 1985-86

MUNICIPALITY/ COMPANY	SERVICE AREA	MATERIALS RECYCLED/ PROCESSES USED*							DIRECT EMPLOYMENT	COMMUNITY PARTICIPATION RATE (%)	REVENUE GENERATED ($ 000s)	NO. OF FIRMS USING SOURCE SEPARATION MATERIAL
		N	G	M	C	H	D	CC				
Durham Recycling	Oshawa Newcastle Pickering Bowmanville Ajax Uxbridge Scugog Whitby	X	X	X	X	X	X	X	7	20	$ 107	3
Halton's Recycled Resources	Milton Halton Hills Burlington Oakville	X	X	X	X	X	X	X	20	10 - 40	$ 308	6

* Materials: N = Newspaper, G = Glass, M = Metal, C = Cardboard, H = Highgrade Paper
Processes: D = Depot, CC = Curbside Collection

MUNICIPALITY/ COMPANY	SERVICE AREA	MATERIALS RECYCLED/ PROCESSES USED							DIRECT EMPLOYMENT	COMMUNITY PARTICIPA-TION RATE (%)	REVENUE GENERATED ($ 000s)	NO. OF FIRMS USING SOURCE SEPARATION MATERIAL
		N	G	M	C	H	D	CC				
Niagara Recycling	Niagara Falls Thorold Pelham Port Colborne St. Catharines Welland Grimsby Lincoln West Lincoln	X	X	X	X	X	X	X	10	10 - 30	$ 290	4
Stratford Recycling	Stratford	X			X			X	2	10	$ 24	2
Total Recycling Systems	Kitchener	X	X	X	X	X	X	X	10	30	$ 520	6

APPENDIX M

SOURCE SEPARATION PROJECTS NOT FUNDED BY MOE IN 1985-86

MUNICIPALITY/ COMPANY	FUNDING SOURCE F = FED M = MUN	SERVICE AREA	MATERIALS RECYCLED/ PROCESSES USED							RESIDENTIAL WASTE RECYCLED (Mg*)	RESIDENTIAL WASTE COLLECTED		NO. OF EMPLOYEES
			N	G	M	C	F	D	CC		(Mg)	% DIVERTED FOR RECYCLING**	
Tottenham District Recycling Inc.	M	Tottenham, Townships of Adjala and Tecumseth	X	X	X	X		X		91	N/A	N/A	1 + 30 volunteers
Please Save and Recycle	-	Ajax	X X	X	X	X		X	X	629	2,945	2.7	9
		Whitby	X	X	X	X		X		775	12,498	3.4	N/A
Hamilton-Wentworth Third Sector Employment Enterprises	F, M	Hamilton	X			X	X	X	X X	2,452	92,525	2.4	28
		Ancaster	X						X	154	5,676	2.7	
		Dundas	X						X	226	7,100	3.0	
		Stoney Creek	X						X	203	12,365	1.6	
Upper Canada Recycling	-	Aurora	X			X	X	X X	X	N/A	N/A	N/A	
		Newmarket	X					X	X	418	N/A	N/A	6
Grey-Bruce Recycling	-	Mount Forest	X					X		1,294	N/A	N/A	3
		Barrie	X						X	176	14,784	1.1	
		Owen Sound	X					X	X	123	N/A	N/A	N/A

* 1 Mg = 1 tonne

** Average annual percent

N = Newspapers
G = Glass
M = Metal
C = Cardboard
F = Fine
D = Depot
CC = Curbside Collection

MUNICIPALITY/ COMPANY	FUNDING SOURCE F = FED M = MUN	SERVICE AREA	MATERIALS RECYCLED/ PROCESSES USED							RESIDENTIAL WASTE RECYCLED (Mg)	RESIDENTIAL WASTE COLLECTED		NO. OF EMPLOYEES
			N	G	M	C	F	D	CC		(Mg)	% DIVERTED FOR RECYCLING	
Region of Halton	-	Oakville	X	X	X			X		N/A	N/A	N/A	N/A
		Milton	X	X	X			X		N/A	N/A	N/A	N/A
		Burlington	X	X	X			X		119	35,549	0.3	N/A
Recycling for Charity Inc.	-	Sarnia	X						X	150	N/A	N/A	3
		Cambridge	X						X	192	10,772	1.7	N/A
Northumberland Recycling	-	Port Hope Cobourg	X	X	X	X	X	X	X	470	N/A	N/A	2
City of Etobicoke	-	Etobicoke	X	X				X	X	2,920	86,830	3.3	7
Bridgewater Paper Systems	-	Fort Erie	X		X	X		X X	X	776	N/A	N/A	3
City of Guelph	-	Guelph	X	Used Oil				X	X	407	21,784	1.8	N/A
Recycle Guelph	-	-	X	X	X			X		76	21,784	0.34	4 volunteers
Last Chance Recycling	F	Guelph	X	X	X	X	X	X		94	21,784	0.3	2
Town of Halton Hills	-	Halton Hills	X	X	X				X	432	9,009	4.5	N/A
Region of Halton, Halton Hills	-	Halton Hills	X					X		41	9,009	0.35	N/A
City of Kanata	-	Kanata	X						X	65	9,316	0.7	N/A

MUNICIPALITY/ COMPANY	FUNDING SOURCE F = FED M = MUN	SERVICE AREA	MATERIALS RECYCLED/ PROCESSES USED							RESIDENTIAL WASTE RECYCLED (Mg)	RESIDENTIAL WASTE COLLECTED		NO. OF EMPLOYEES
			N	G	M	C	F	D	CC		(Mg)	% DIVERTED FOR RECYCLING	
Wilf Morrison Trucking	-	London	X						X	2,665	99,139	2.8	6
Thornhill Recycling Depot	M	Markham	X	X	X	X		X		200	N/A	N/A	80 volunteers
Unionville Recycling Depot	M	Markham	X	X	X	X		X		172	N/A	N/A	31 volunteers
Robran Construction	-	Mississauga	X						X	1,043	118,157	0.8	30
Mississauga Clean City Campaign	F, M	Mississauga	X	X				X		171	118,157	0.1	N/A
City of North York	-	North York	X	X				X	X	25	149,365	0.02	0.1
Consolidated Fibres	M M	North York Scarborough	X X						X X	247 549	149,365 133,100	0.6 0.8	N/A N/A
City of Ottawa	-	Ottawa		X	X			X		442	115,124	-	N/A

MUNICIPALITY/ COMPANY	FUNDING SOURCE F = FED M = MUN	SERVICE AREA	MATERIALS RECYCLED/ PROCESSES USED							RESIDENTIAL WASTE RECYCLED (Mg)	RESIDENTIAL WASTE COLLECTED		NO. OF EMPLOYEES
			N	G	M	C	F	D	CC		(Mg)	% DIVERTED FOR RECYCLING	
Renfrew County Recycling	-	Pembroke	X				X	X		61	N/A	N/A	5
Ajax-Pickering Recycle		Pickering	X					X	X	51	N/A	N/A	0
Scott's Plains Recycling	F	Peterborough	X X	X	X	X		X	X	700	17,425	3.0	9
Ridgetown Public School	-	Ridgetown	X					X	X	51	N/A	N/A	0
St. Catharines Water Collection	-	St. Catharines	X					X		887	25,523	3.2	N/A
Stolk Enterprises	-	Sarnia	X	X	X	X	X	X	X	414	N/A	N/A	1
City of Scarborough	-	Scarborough	X	X	X			X		595	133,100	0.5	N/A

MUNICIPALITY/ COMPANY	FUNDING SOURCE F = FED M = MUN	SERVICE AREA	MATERIALS RECYCLED/ PROCESSES USED							RESIDENTIAL WASTE RECYCLED (Mg)	RESIDENTIAL WASTE COLLECTED		NO. OF EMPLOYEES
			N	G	M	C	F	D	CC		(Mg)	% DIVERTED FOR RECYCLING	
Scarborough East Recycling Project	-	Scarborough	X	X						5.5	133,100	-	N/A
City of Stratford	-	Stratford	X					X		13	N/A	N/A	N/A
City of Toronto	-	Toronto	X	X	X			X	X	3,705	247,692	1.5	15
Woodbridge Area Recycling Depot	M	Vaughan	X	X		X		X		46	N/A	N/A	30 volunteers
Whitchurch-Stouffville Recycling Group	M	Stouffville	X	X	X	X		X		180	4,128	3.3	N/A
The Recycling Centre	-	Windsor	X			X		X		3,117	68,750	1.9	8
Tri-County Recycling	-	Windsor	X			X		X		99	68,750	0.0	14
City of Woodstock	-	Woodstock	X	X	X				X	467	N/A	N/A	N/A
				Used oil				X					
J C Waste Management	-	Toronto				X	X	X		N/A	N/A	N/A	6
Conservation Centre in East York	-	East York	X	X	X		X		X	N/A	N/A	N/A	5
Richmond Hill Recycling	-	Richmond Hill	X	X	X	X	X	X	X	N/A	N/A	N/A	2

APPENDIX N

MARKET DEVELOPMENT PROJECTS ON RESOURCE RECOVERED MATERIALS DURING 1985-86

Ongoing (O)
Completed During the Year (C)

Use of compost as a soil amendment by nurseries for turf growing on steep slopes and for turf maintenance by golf courses (O),

Market and product development of top soil blends with various groups (O),

Evaluation of a disc screen to investigate the development of a plastic free compost (C),

Monitor the marketing of compost as an ingredient in "potting soil" for use in greenhouses (O),

Investigation of the possibility of having one company marketing the entire compost output from ERRP (O),

Development of pelletized compost to be granulated and used as fertilizer (C),

The testing of pelletizing refuse derived fuel (O),

Investigation of compost as soil amendment by public works departments (O),

Product and market development of compost used by conservation authorities (O),

Marketing of plastics and paper from refuse-derived fuel and also making plastics available for secondary recycling (O),

Evaluation of the use of refuse-derived fuel as supplementary fuel for cement kilns (O),

Providing shredded ferrous to a steel mill and evaluation of ferrous baling equipment (C),

Evaluation of a grizzly screen for yielding higher glass content (C),

Rationalization of resource-recovered ferrous markets (O),

Market development for recycled rubber products (O), and

Promotional activity with the public at Waste Management Master Plans concerning the 4Rs (O).

APPENDIX O

ENVIRONMENTAL ASSESSMENTS APPROVED DURING 1985-86

PROJECT NAME (Proponent)	PROJECT TYPE	SIGNIFICANT ENVIRONMENTAL FACTORS OF CONCERN	AUDITABLE CONDITIONS OF APPROVAL
Hwy. 17 - White Fish Hwy. 6 (Ministry of Transportation and Communications)	Individual (1-79-0008-000)	none	- approval to designate only, not to construct
Eastern Ontario Route East (Ontario Hydro)	Individual (1-77-0007-002)	- route location conflicting with Ontario Land Corporation holdings and National Capital Commission holdings	none
Minor Transmission (Ontario Hydro)	Class (2-75-0001-000)	- any significant factors will be addressed in the Environmental Reports generated as per the Class EA	- proponent to comply with EA as amended - proponent to re-evaluate Class EA and advise MOE by December 31, 1989 - approval terminates December 31, 1990
Water Management (Conservation Authorities)	Class (2-82-001-000)	- impact on water quality - impact on affected landowners - impact on flora/fauna	- circulation to Government agencies - 30-day public review - "bump-up" procedures - file to MOE Public Record

PROJECT NAME (Proponent)	PROJECT TYPE	SIGNIFICANT ENVIRONMENTAL FACTORS OF CONCERN	AUDITABLE CONDITIONS OF APPROVAL
Hwy. 406 - Welland (Ministry of Transportation and Communications)	Individual (1-81-0011-000)	- noise impact - access - municipal services	- design and construction reports to be submitted at each construction stage
Eastern Ontario Route West (Ontario Hydro)	Individual (1-77-0007-001)	- visual effects especially at James Falls (Parks Can.) - location through existing subdivision and proposed developments	none
Scarborough-Warden Transmission (Ontario Hydro)	Individual (1-84-0001-000)	- concerns expressed about potential health effects of transmission line's magnetic field on residents and school children.	none
Provincial Highways Program (Ministry of Transportation and Communications)	Class (2-83-001-000)	- any significant environmental factors that may arise in a class project will be addressed in the Environmental Study Reports	- proponent to comply with EA as amended - proponent to re-evaluate and advise MOE by December 1, 1990 - approval terminates December 1, 1991

APPENDIX P

SEWAGE TREATMENT FACILITY EFFLUENT GUIDELINES

Treatment Level and Processes	BOD (mg/L)	SS (mg/L)	Total Phosphorus* (mg/L)
A. PRIMARY TREATMENT			
- without phosphorus removal	30% removal	50% removal	-
- with phosphorus removal	50% removal	70% removal	1.0
B. SECONDARY TREATMENT			
1. Conventional Activated Sludge			
- without phosphorus removal	25	25	-
- with phosphorus removal	25	25	1.0
2. Contact Stabilization			
- without phosphorus removal	25	25	-
- with phosphorus removal	25	25	1.0
3. Extended Aeration			
- without phosphorus removal	25	25	-
- with phosphorus removal	25	25	1.0
4. Continuous Discharge Lagoon			
- without phosphorus removal	30	40	-
- with phosphorus removal	30	40	1.0
5. Seasonal Retention Lagoon			
- without phosphorus removal	30	40	-
- with phosphorus removal by batch chemical dosage	25	25	1.0/0.5
- with phosphorus removal by continuous chemical dosage	30	40	1.0
6. Physical Chemical Treatment	25	25	1.0

* Effluent design objectives are for total phosphorus since effluent model and cost data are available

APPENDIX Q

INVENTORY OF MUNICIPALITIES WHICH RECEIVED TERMITE GRANTS DURING 1985-86

Borough of East York
City of Etobicoke
City of Guelph
City of Hamilton
Town of Kincardine
Town of Leamington
City of Mississauga
City of North York
City of Scarborough
City of Toronto
Township of Woolwich
City of York

APPENDIX R

INVENTORY OF MUNICIPAL WATER TREATMENT FACILITIES UNDER THE DRINKING WATER SURVEILLANCE PROGRAM

1985-86 ACTUAL

Niagara Falls
Lakeview (Mississauga)
Sarnia
Wallaceburg
Windsor
Kingston
Lake Huron (London)
R.C. Harris (Toronto)
R.L. Clark (Toronto)
Easterly (Toronto)

APPENDIX S

INVENTORY OF SEWAGE TREATMENT FACILITIES PRODUCING MARGINAL OR UNACCEPTABLE SLUDGES

1985-86 ACTUAL

SEWAGE TREATMENT FACILITIES PRODUCING MARGINAL SLUDGES	SEWAGE TREATMENT FACILITIES PRODUCING UNACCEPTABLE SLUDGES
Norwood	Burlington Skyway
Belleville	Port Hope
Prescott	CFB Trenton
Dundas	Espanola
Dunnville	
Woodstock	
Ingersoll	
Parry Sound	
Levack	

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